Railway Age

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FIRST HALF OF 1927—No. 11 NEW YORK—MARCH 12, 1927—CHICAGO SEVENTY-SECOND YEAR

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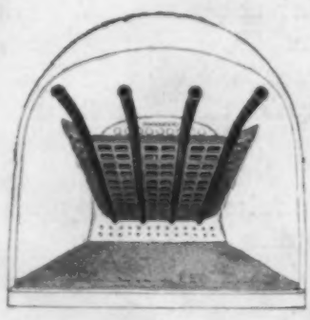

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Combustion Specialists

NEW YORK CHICAGO

Security Sectional Arch

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350-3

Volume 82 Number 11
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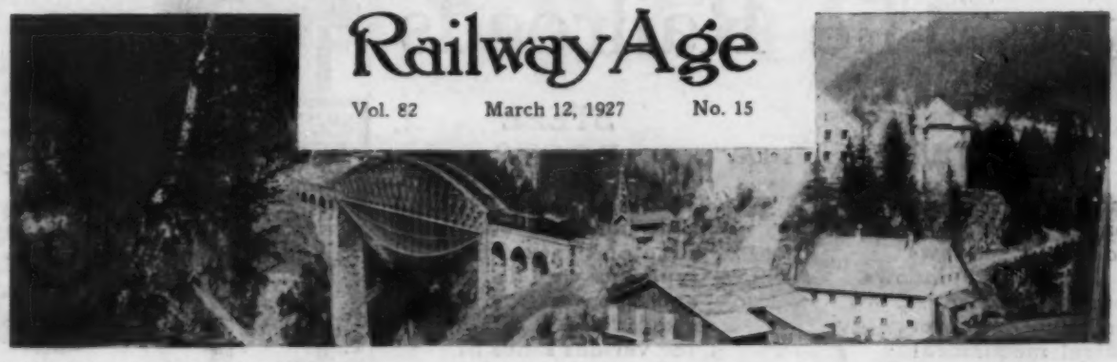
Railway Age

Vol. 82 March 12, 1927 No. 15



Electric Train on Trisanno Bridge, Austria

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Counterbalanced
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window operators.**

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Some of the Railroads Using Truscon Products

Railway Age

Vol. 82, No. 15 March 12, 1927 Table of Contents Appears on Page 5 of Advertising Section

Railroad Situation Reviewed by Dr. Hadley

THE discussion on railroad regulation by Dr. Arthur T. Hadley, reprinted in another column, from the Yale Review, is from the concluding portion of a fifteen-page article, which will be found of absorbing interest by everyone who likes to study a subject from the very foundation. Dr. Hadley has been a factor in the formation of public opinion in this country for more than 40 years; but in this article he goes back 2,000 years, with references to Aristotle, James Watt, Adam Smith and others, whose words of wisdom are entertainingly fitted into the twentieth century problems of railroad and commercial economists and of all branches of public service. Dr. Hadley intimates that certain other public service interests have sensed the spirit and attitude of the public better than have the railroads, and warns that the railroads, in their effort to come to a full understanding with the public, have still a considerable distance to travel. "Back to basic principles" is the gist of Dr. Hadley's concluding appeal.

Keeping the Cars Moving

ONE of the principal indexes of the operating efficiency of a railway is its average miles per car per day. So many factors enter into car movement and the average varies so widely on different railroads, however, that comparisons between different lines, even in the same section of the country, are more or less futile. On the other hand, a comparison of the past and present averages of the same railroad is usually significant. The Chicago Great Western has established an enviable record for car miles, as described elsewhere in this issue, and is maintaining this average practically at its peak. As is the case on all railroads, this average is largely controlled by five factors: The class of traffic; the condition of motive power; the condition of cars; road, yard and terminal facilities; and prompt loading and unloading of cars by shippers and consignees. The Chicago Great Western is particularly favored in these respects. None the less, its record would not have been nearly so impressive if its officers had not set about improving and taking advantage of the favorable situation. Through a general educational campaign with circulars and specific individual campaigns of personal calls by car service officers, they have awakened employees to a sense of car values. A system has been installed for obtaining home routing more promptly, resulting in keeping the country stations clear of empties. The live stock traffic has been studied and operations improved to obtain maximum car efficiency and the fact has not been lost sight of that, while at first glance the increasing of the average miles per car per day suggests the rapid movement of cars, speed is a relatively unimportant factor as compared with the reduction of dead time. Whenever excess cars are permitted to accumulate at terminals, or to clutter up sidings at country stations, miles per car per day are sure to be low.

Gold Nuggets

NO one ever thinks of looking for gold nuggets at engine terminal or power plant cinder pits, and yet they are there—at least little nuggets of carbon, distantly related to the diamond itself and appreciably valuable, are present in great abundance. It can hardly be questioned that these nuggets, so ruthlessly trampled under foot and consigned to the dump, represent in the aggregate a tremendous loss to the railroads. Can this loss be reduced? The subject of fuel loss from unburned coal in cinders received attention at the last convention of the International Railway Fuel Association, when W. B. Landon, chief chemist of the Erie, testified that analyses of 95 cinder pit samples which he made showed about 33 per cent carbon. Other tests have indicated the presence of 20 to 30 per cent unburned carbon at the average engine pit, dependent largely upon the care which firemen exercise in arriving at final terminals with fires well burned out. Twenty per cent, or even 10 per cent, of locomotive coal is a figure impressive in its magnitude. Attempts are now under way in both railroad and industrial plants in this country to conserve a large part of this wasted fuel, and railroads in general should investigate carefully the success of the methods used before saying that it can't be done.

Heating Long Passenger Trains

THE increased use of locomotives of large tractive force in passenger train service this winter has especially emphasized the need for making further improvements in car heating equipment. This is primarily the responsibility of the mechanical department and the manufacturers of car heating equipment. The operating and traffic departments, however, are also vitally concerned in the solution of this problem and it is essential that the mechanical department and manufacturers have their co-operation in the study and development of equipment that will adequately heat passenger trains of 15 cars or more. Some facts of interest and value were developed in a discussion of this subject at a recent meeting of the Manhattan Air Brake Club. It requires about 100 lb. of steam per hour to heat a wooden car and about 135 lb. of steam per hour to heat a steel car to 70 deg. with an outside temperature of 25 deg. above zero, the train traveling at a speed of 25 m.p.h. With a maximum train line pressure of 130 lb. at the reducing valve, it has been found impossible to heat the rear cars of a 15-car train to anywhere near 70 deg. Under these conditions, it has been found necessary to have the initial train line pressure materially higher to supply

steam fast enough to be carried back to the rear car of such a train. The utilization of high steam line pressures presents a number of difficult problems in design, maintenance and operation that can only be solved by considerable study and experiment.

Falling Commodity Prices

MORE or less uneasiness has been caused recently by the falling commodity prices which have been interpreted by some to indicate a tendency toward overproduction. One authority in making a check-up in certain industries discovered that while in some instances costs were lower than at the same time last year, there has been no change in the margin of profit. In other words, improved methods or processes, elimination of waste, etc., have made it possible to lower the cost of production, and part, at least, of this saving has been passed on to the public. Whether prices and costs usually have declined together it is as yet impossible to determine but there is apparently reasonable grounds for assuming that in many instances this has been the case. If this is true it reflects a most healthy condition in general business and industry, which should be reflected in railway activities.

Untiring Safety Zeal

THE railroads as a whole, and mechanical departments in particular, are exhibiting an untiring zeal for "Safety First" which makes that beneficent movement one of the most important ever undertaken in the interests of railroad employees and railroad owners alike. It is difficult to find a shop or enginehouse today which does not to some degree practice the principles of "Safety First," and at many points the emphasis given this subject implies that it is considered more important than any other. Detailed records are kept, accidents studied to prevent repetition, accident prevention goals set up and every means utilized to stimulate interest. The mechanical department of the Kansas City Southern, to mention a single example, by an intensive campaign in 1926 increased its record of man-hours per personal injury almost 41 per cent over the corresponding figure for the previous year. It is interesting to note that the locomotive department on this road made a relatively better showing than the car department and that over 53 per cent of the individual casualties were caused by falling objects or persons falling, thus indicating where the emphasis is most needed in further attempts at accident reduction. Persistent effort to correct accident-producing conditions is still needed, especially at railroad shops and engine terminals, where more than the usual hazards exist.

As Good as Night Signals

EVERY conductor, brakeman and track foreman, and every other railroader who has to give hand-motion signals to enginemen ought to carry in a right hand pocket a large red handkerchief and in a left hand pocket a large white one, so as to be able to give both stop and proceed signals with promptness and in a way to make the motions unmistakably visible to the persons who must act on them. This dictum (uttered many years ago) is not a rule of the American Railway Association, nor of any railroad, so far as we know, but some recent occurrences suggest that it might be a useful rule. The yard conductor who told some wage-arbitrators that because of the great length of trains he had to use a newspaper in making hand motions, was no doubt arguing simply for the employment of more helpers, but he had good reason to make a broader argument. To make motions with the bare and empty hands exactly like the motions that are naturally made with a lantern is not practicable. And simplicity and efficiency would be promoted by the use of a paper, or a handkerchief, flag or banner, on short trains as well as on long ones. The yard engineman who complained that he was sometimes delayed in moving his engine because a hand signal given by a brakeman could be interpreted as either stop or go ahead, was not merely growling; he was reporting what is a common fault.

Community Advertising

WHILE the problem of making station signs easily readable by day or night is, perhaps, not a highly important one when compared with other railroad questions, it is a matter that takes on importance the minute a passenger with normal curiosity boards a train. The railroads are striving to do everything reasonable and possible to insure the satisfaction of passengers, and doubtless, have already considered the advisability of increasing the pleasure of all who ride their trains by satisfying curiosity as to the identity of stations. While it is apparent that they could make station signs more legible, it would seem that the various communities would be even more vitally interested. There are few towns or cities today that do not have huge signs with descriptive matter on the highways for the motorist to see as he enters and leaves the community. These are considered a good advertising medium. A few civic improvement groups—very few, however—have realized that the railroad right-of-way offers a good place to present its story on signs. Might it not be wise to direct the attention of the various chambers of commerce or other community organizations along the lines to the obviously superior medium of advertising to be had in signs placed on either side of the track and lighted so that those who ride by train, and greatly outnumber those who ride by automobile, may read and recognize the town?

Roast Beef for Fifty--- Or Steak for One?

IN America a fair average annual wage cost of operating a dining car is $10,000, whereas in France it is about $720, a difference of approximately 1400 per cent. This fact, which C. H. Jennings, superintendent of dining cars of the St. Louis Southwestern, has called to our attention, was brought out, together with other pertinent comparisons between American and European dining cars, several years ago at a convention of the American dining car superintendents; we doubt that the intervening time has changed the percentage much.

What is the reason for this?—undoubtedly the lower wage rate abroad under which all employees except the chef subsist on tips alone. An average check per customer on the Continent was given at $1.14, which is astonishingly high compared with ours when the prevailing differences in the general living standards are taken into account. Some other conditions operating in favor

of the European dining car are the prevalence of table d'hote service, waiters serving passengers at the tables from large platters; handling the passengers by prearranged sittings at stated hours so that they are all receiving the same courses at the same time; sale of meal tickets in advance; less kitchen space (fewer iced foods handled), hence more seats for diners.

An officer of the International Sleeping Car Company, who answered the questions concerning European practice, epitomized the contrast with conditions here by the statement, "I do not think that it is very much harder to prepare a piece of roast beef for fifty people than ..... steak for one." Plainly there are some conditions in Europe impossible for our dining car departments to emulate. The wage scale is one. Another is the fact that food is counted on for less than half the gross receipts; the remainder comes from cigars, tobaccos and certain refreshments not to be found on American menu cards. However, the advantages of the table d'hote meal remain and, the more the American people grow to like such service, the more our dining car departments may be expected to benefit.

The Impending Coal Strike

WITH March 31 less than a month ahead railroads find an increasing cause for concern in the coal situation. This is the time when the existing agreement between the coal operators and union miners in the soft coal fields expires. The feeling has been prevalent since early last fall that negotiations for a new agreement would terminate in a strike in the unionized soft coal fields, comprising principally Illinois, Indiana, Ohio and western Pennsylvania. There seems to be no question at the present time that the strike will occur. The operators give every evidence of their determination to insist upon a cut in wages and changes in working conditions which will help to bring the cost of coal production down to a basis permitting competition with non-union fields. The officials of the union miners are just as determined not to accept any change in the existing agreement. In this they appear to represent the sentiment of the union miners.

The demand of last year's business in this country for coal, the increased demand for export coal brought about by the British strike, the seasonal demand for coal for winter consumption and the additional demands upon the mines created by the effort of large consumers, including the railroads, to store coal in anticipation of the strike, have boosted and maintained soft coal production at record figures, and the union miners have been getting good wages out of this business. Moreover the miners know that in every year there is a slack season attended by unemployment, and they also know that a great deal of the coal now being mined is being mined in anticipation of the strike, which will leave less coal to be mined later and a corresponding increase in the days of unemployment. The union miners, therefore, feel that they have more to gain than lose by striking, and for some time past large sums have been liberally contributed to a general fund to use for strike relief and for the purpose of enlisting the support of non-union miners.

A cessation of operation for any length in time in the coal fields means a great deal to the railroads. The Class I railroads of the United States consume approximately 25 per cent of the total coal produced. They carry practically all of the coal mined, constituting much the largest item of their total tonnage. It is important to the railroads that coal production should not be seriously interrupted. Many roads have anticipated the strike and have large stocks of storage coal within reach. Others are in a fortunate condition as far as their own needs are concerned in operating mines of their own or using oil. The non-union mines, moreover, are expected to be able to produce most of the coal required for current consumption, but any prolonged strike is bound to prove disturbing, and planning is needed to minimize its effects. Railroad supply officers in particular have occasion to watch the situation closely to keep their purchases and supplies from getting out of line.

What Will Mr. Loree Do Now?

WHAT will Mr. Loree do now? This is the one question that, naturally enough, has formed in the minds of observers who have followed Mr. Loree's activities during the past year or two. His loss of the Buffalo, Rochester & Pittsburgh, due to the refusal of the directors of that company to extend again an option for the lease of that road by the Delaware & Hudson, is supposedly his second repulse in the space of a single month. The other was the acquisition of control of the Wheeling & Lake Erie—a key-road in the Loree fifth trunk-line plan—by the New York Central, Baltimore & Ohio and the Nickel Plate.

Students of railroading were interested when Mr. Loree announced his dissent from the so-called three-system plan of allocating the roads in trunk-line territory. This was heightened by the news that leaked out about the informal presentation to the Interstate Commerce Commission of the Loree fifth trunk-line system and the advocacy of the construction of the New York, Pittsburgh & Chicago across Pennsylvania. Interest reached a fever heat when announcement was made that Mr. Loree had acquired the Buffalo, Rochester & Pittsburgh. It was revived again more recently when there was a stock market flurry in Lehigh Valley said to have been brought about by Mr. Loree's acquisition of a large interest in the stock of that road which he had included in his fifth trunk-line plan and which he needed to join the Buffalo, Rochester & Pittsburgh and the Delaware & Hudson and to supply a connection between Easton, Pa., and tidewater for the New York, Pittsburgh & Chicago.

When the Wheeling & Lake Erie was lost to Mr Loree, observers expected that he would counter with some outstanding stroke of railroad strategy. The big event was supposedly discovered to be an alliance with the powerful Pennsylvania, but the only practical evidence of community of interest was the acquisition of trackage rights connecting the Buffalo, Rochester & Pittsburgh and the Delaware & Hudson. This step, however, indicated that Mr. Loree probably had not succeeded after all in acquiring sufficient control of the Lehigh Valley which would supply a much shorter and more economical connection between the two smaller roads; nor is the Pennsylvania trackage agreement necessary now that the Buffalo, Rochester & Pittsburgh is lost. Now comes the refusal of the Buffalo, Rochester & Pittsburgh directors to extend their option for a 999-year lease to the Delaware & Hudson, which refusal was made even after a request from the Interstate Commerce Commission that an extension of time be made. Observers who follow Mr. Loree's activities are at a disadvantage because he keeps his confidences so much to himself. It may be that he has not had in mind at all the things that the observers have attributed to him. It may be, on the other hand, that some real accomplish-

ment is in the making. For the moment it looks as if Mr. Loree would find it desirable to continue with his contemplated merger in the southwest, but that he might have to forego the pleasures of continuing to excite interest in eastern territory in the same degree that he has been in the recent past.

Test of the Watson-Parker Act

THE Watson-Parker Railway Labor Act is now being subjected to its first critical test. This is in the wage dispute between the western railways and their conductors and trainmen. It may be known before this editorial is published whether the act has stood the test.

The conductors and trainmen were the first groups of employees to seek a large advance in wages after the act went into effect. Their controversy with the eastern railways was submitted to arbitration under its provisions, and the employees were awarded a 7½ per cent advance. Soon afterward representatives of the same classes of employees entered into negotiations with a committee representing all the large southeastern lines, excepting the Southern. The railways proposed arbitration. The representatives of the employees rejected it on the ground that there already had been arbitration and an award.

There had not been arbitration with the southeastern railways, and the position of the labor leaders was contrary to the plain provisions and intention of the Watson-Parker Act. A strike vote was taken, and the negotiations were renewed. The act provides that, in case of a dispute which the parties refuse to arbitrate and which threatens an interruption of transportation, the President, on the initiative of the Federal Board of Mediation and Conciliation, may appoint a fact-finding commission. The Mediation Board refrained from recommending the creation of such a commission, apparently in the belief that no interruption of transportation was actually threatened. The southeastern lines then granted the same advance that had been made by the eastern lines.

The officers of the conductors' and trainmen's brotherhood have now asked the western lines to grant the same advance that has been made by the railways of the east and southeast. The Conference Committee of Managers of Western Railways has declined, and suggested arbitration. Again the labor leaders have taken the position that there already has been arbitration, and mediation has been commenced.

Wide Differences in Conditions

The reason why the dispute in western territory will subject the Watson-Parker Act to its first real test is that railway and other conditions there are widely different from those in the east and southeast. Freight business has increased less, passenger business has declined more, the advance since before the war in freight rates has been relatively less, the average net return being earned by the railways is less, and the territory is predominantly an agricultural one in which the farmers are unprosperous. There are always really three parties to every railway rate or wage controversy—the employees who receive the wages, the railways and their security owners that receive the net operating income, and the public that pays the rates. The employees involved in this controversy are now receiving higher wages in proportion to the cost of living than ever before. The western railways are earning a net operating income relatively much less than before the war, and much less than a "fair return," measured by any standard. If any advance in wages is reasonable, then it will be reasonable to make a general advance in rates in western territory to reimburse the railways for it. In spite of the admittedly inadequate net return the western railways have been earning, the Interstate Commerce Commission already recently has refused to grant a general advance in rates.

The position taken by the labor leaders is that railway employees in the west are entitled to the same wages as in the east, and that it is no concern of theirs what the effect of an advance in their wages may be upon the net return earned by the railways or the rates the public must pay. The managers of western railways obviously cannot agree that that position is reasonable. For them to grant voluntarily the proposed advance in wages would be for them to disregard their duty to the owners of railway securities and to the public that pays passenger and freight rates and is dependent on the railways for service.

The controversy is as clearly one for arbitration in which all the parties concerned should be given a hearing as any that ever can arise. It is just such a controversy as railway executives and labor leaders assured Congress and the public they would arbitrate if the Watson-Parker Act were passed. It is plainly the kind of controversy that, on the initiative of the Mediation Board, should be referred to a fact-finding commission if arbitration is declined.

Labor Leaders' Illogical Position

The position taken by the labor leaders, that there already has been arbitration, disregards the representations that were made to Congress in behalf of the Watson-Parker Act and the plain provisions and intention of that law, and is illogical and quibbling. If an arbitration involving one group of roads should be held to determine controversies with all other groups of roads, then with equal reason, or lack of it, an arbitration with one road, large or small, should be held to settle what wages should be paid on all roads. The representations made to Congress in behalf of the Watson-Parker bill, and the provisions of that measure, plainly contemplate the use of every available means by the parties to a dispute, to arrive at a peaceful settlement; and what has been done in some other dispute has nothing to do with the matter, excepting, perhaps, as evidence. The railway executives who supported the Watson-Parker act certainly would not have done so if the labor leaders had told them it was their understanding of the bill that an award made in an arbitration with one road or a group of roads would preclude arbitration of similar disputes with entirely different railways or groups of railways.

The labor leaders, after refusing arbitration in the southeast, resorted to a strike vote. The Mediation Board apparently thought they would not call a strike; but some of the labor leaders themselves have definitely indicated that they would have called one. This would have announced the failure of the Watson-Parker Act. The managers of western railways, for well-known reasons, cannot afford to assume the responsibility of voluntarily making such an advance in wages as is being demanded. In the circumstances, it is hardly conceivable that the labor leaders will finally refuse to arbitrate. If they should, it would be the plain duty of the Mediation and Conciliation Board to recommend to President Coolidge the appointment of a fact-finding commission.

If the proposed advance is secured in western territory without either arbitration or the recommendation of a fact-finding commission the time will have come to admit that the Watson-Parker Act is a futile gesture, and that Congress must begin again trying to find some means of protecting the public from unreasonable wage settlements or strikes.

The Peru, Ind. Store Used to Carry Over $300,000 of Stock. It Now Carries Less Than $90,000. Car Materials in the Picture

Chesapeake & Ohio Reorganizes Purchasing and Stores Work

Systematic and vigorous program puts supply operations on efficient basis—Stocks cut $9,500,000

DURING the last six years, the Chesapeake & Ohio and its subsidiary, the Hocking Valley, have reorganized their purchasing and stores work with spectacular results in reducing investments and in improving operations. In the period of five years ending with 1926, gross revenues of the Chesapeake & Ohio increased approximately 56 per cent and operating expenses approximately 36 per cent. Purchases of materials and supplies increased from $20,687,000 in 1921 to $25,409,000 in 1926, or approximately 25 per cent. Yet the money tied up in materials and supplies on hand was reduced from $15,830,000 in April, 1921, and $10-

		C. & O.	H. V.
Materials and supplies	April, 1921	$15,830,000	$3,320,000
Materials and supplies	December, 1926	6,167,900	804,709
Materials and supplies	decreased	60 per cent	75.3 per cent
Gross revenues	increased	56.3 per cent	41.9 per cent
Operating expenses	increased	35.9 per cent	18.0 per cent
Purchases	increased	25.0 per cent	50.0 per cent

261,000 in December, 1921, to $6,168,000 in December, 1926, or about 60 per cent. The aggregate is now only 7 per cent of the annual operating expenses.

In the same five-year period, gross earnings of the Hocking Valley increased approximately 42 per cent, while operating expenses increased 18 per cent and purchases for ordinary maintenance and operation increased almost 90 per cent. Yet the money tied up in materials and supplies on this road was reduced from $3,320,000 in April, 1921, and $2,285,000 in December, 1921, to

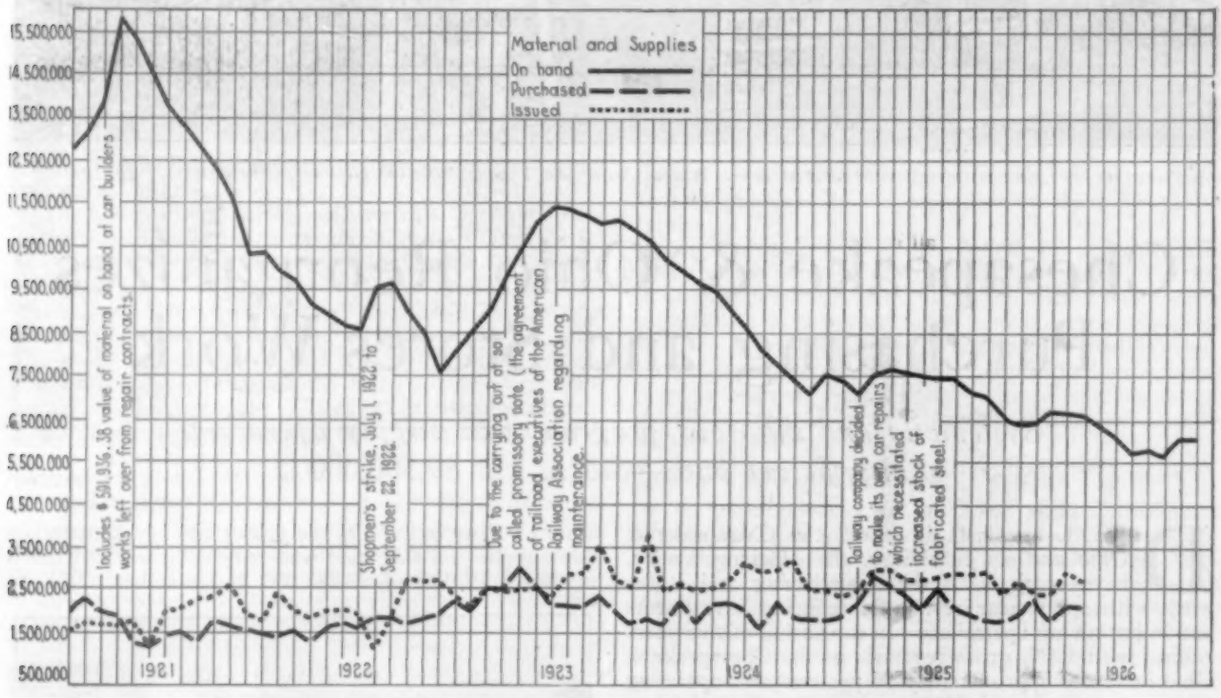
Maintenance of Way Lumber Yard at Huntington After the Reorganization

$805,000 in December, 1926, or approximately 75 per cent.

Richmond, Va., is one of the smaller shop points on the Chesapeake & Ohio, but a place of sufficient importance to have been selected as the initial point at which

A Yard of Maintenance of Way Lumber Before the Reorganization. Note Disorder

to start the improvement work. In April, 1921, its stock on hand—entirely stores stock—was inventoried at $734,983, against disbursements of only $45,067, while the inventory for November, 1921, was $995,000, and the disbursements, $128,333. The conditions on December, 1926, are represented by a stock of only $129,130, a reduction of 80 per cent, disbursements of $101,226, a turnover of stock of 43 per cent a month, as reflected by the ratio of disbursements to total stock available, and a service performed of 98.9 per cent as determined by the number of items (not orders) of stock supplied when called for by users.



The Trend of Total Materials on Hand on the Chesapeake & Ohio 1921 to 1926

Clifton Forge, Va., is a main shop point, which has a much bigger business now than before. In April, 1921, the book value of the stores stock at Clifton Forge was $851,473, for disbursements of $72,044. On December 31, 1926, the stock was down to $153,742, a reduction over 90 per cent, while disbursements were $148,053, or about double. The turnover, as reflected by the ratio of disbursements to total stock available, was 49.55 per cent per month, and the service, 98.43 per cent, as reflected by the percentage of items of stock supplied when called for.

Russell, Ky., is the site of a large freight classification yard, where 208 cars received heavy repairs and 8,936 light repairs in the representative month of May, 1926. In April, 1921, the book value of stock was $331,246, and the disbursements $41,871. In December, 1926, the book value of stock was down to $98,284, a reduction of 73 per cent, while disbursements were $88,381, or about double, the ratio of stock turnover per month, as reflected by the ratio of disbursements to total stock available was up to 43.76 per cent, and the service performed was 99.85 per cent on the basis of the

Consolidated Performance December, 1926

Location of storekeeper	Stock on hand fir t day of month	Received during month	Total stock available	Issued during month	Per cent	Total number employees	Total amount payroll	Cost for $1,000 issued	Service performed, per cent
Richmond, Va.	$129,130.11	$105,246.77	$234,376.88	$101,226.18	43.19	45	$4,424.99	$43.71	98.90
Newport News, Va.	82,408.82	85,203.91	167,612.73	53,859.33	32.13	17	1,819.24	33.78	99.80
Fulton, Va.	68,049.51	57,290.28	125,339.79	49,475.03	39.47	19	2,010.72	40.64	99.50
Charlottesville, Va.	6,872.23	5,162.93	12,035.16	5,778.38	48.01	2	207.88	35.98	99.94
Gladstone, Va.	11,067.88	6,961.61	18,029.49	9,391.31	52.09	2	237.69	25.31	99.85
Clifton Forge, Va.	153,742.83	145,064.57	298,807.40	148,053.24	49.55	29	3,204.95	21.64	98.43
Ronceverte, W. Va.	11,404.78	12,011.42	23,416.20	10,797.08	46.11	3	334.70	30.99	98.51
Hinton, W. Va.	36,391.27	45,657.04	82,248.31	35,309.15	42.93	16	1,906.03	53.98	99.12
Thurmond, W. Va.	9,432.15	8,872.40	18,304.55	8,691.83	47.49	4	551.51	63.46	98.30
Raleigh, W. Va.	4,455.84	3,613.54	8,069.38	2,693.43	33.38	2	289.00	107.32	99.70
Handley, W. Va.	16,010.38	14,715.57	30,725.95	13,752.10	44.68	6	704.68	51.24	99.68
Cane Fork, W. Va.	4,362.34	3,181.60	7,543.94	3,192.93	42.32	2	240.97	75.46	99.52
St. Albans, W. Va.	6,592.68	4,211.27	10,803.95	5,036.84	46.64	3	380.42	75.32	99.97
Barboursville, W. Va.	27,919.83	43,283.19	71,203.02	34,510.99	48.46	8	930.59	27.00	99.70
Peach Creek, W. Va.	17,929.37	17,518.19	35,447.56	15,584.57	43.96	8	878.21	56.34	99.95
Huntington, W. Va.	1,975,587.74	1,151,210.53	3,126,798.27	1,078,680.41	34.49	267	36,545.77	33.88	97.53
Ashland, Ky.	16,636.30	15,516.24	32,152.54	14,583.34	45.35	7	826.90	56.70	99.90
Shelby, Ky.	5,354.83	2,065.48	7,420.31	2,842.37	38.30	1	210.41	74.05	99.86
Paintsville, Ky.	4,640.76	3,436.55	8,077.31	3,350.78	41.48	2	186.60	55.68	99.96
Russell, Ky.	98,284.13	103,680.26	201,964.39	88,381.00	43.76	33	3,500.67	39.60	99.85
Lexington, Ky.	8,507.55	5,432.26	13,939.81	5,610.09	40.24	3	461.42	82.42	99.56
Stevens, Ky.	84,254.10	91,307.91	175,562.01	92,471.02	52.67	19	2,015.21	21.79	99.84
Covington, Ky.	24,628.70	17,849.52	42,478.22	14,914.20	35.11	9	1,158.95	77.71	98.20
Peru, Ind.	85,355.62	67,884.22	153,239.84	66,274.15	43.25	19	2,450.91	36.98	98.06
Boston, Ind.	2,314.54	2,314.54	5,175.75	2,485.96	48.03	1	158.45	63.74	100.00
Chevior, O.	6,686.85	4,110.62	10,797.47	4,725.02	43.76	2	257.23	54.44	100.00
Sta. Sk. Richmond, Va.	28,859.18	42,366.52	71,225.70	33,856.97	47.53	10	1,085.74	32.07	100.00
Total	$2,927,626.99	$2,065,168.94	$4,992,795.93	$1,905,527.70	38.17	539	$66,979.82	$35.15	99.39

percentage of items immediately supplied on orders to the total called for.

Peru, Ind., is a typical division store, 325 miles from the general store and with a shop which made 97 Class 2 and 3 repairs to locomotives in 1926. In April, 1921, the book value of stocks (all mechanical) was $361,571, and the disbursements $38,148. In December, 1926, the book value of stock there was down to $85,355, a reduction over 80 per cent, while the disbursements were up to $66,274, or nearly double, the rate of stock turnover per month, as reflected by the ratio of disbursements to total stock available, 43.25 per cent, and the service performed, 98.6 per cent on the basis of the percentage of items filled immediately on orders to the total number called for.

Materials and Supplies on Hand April 30, 1921, to December 31, 1926

	April 30, 1921	December 31, 1926
Stores	$10,126,950	$3,137,269
Roadway material account	.....	573,628
Shop material account	900,609	629,473
Cross ties	2,172,549	805,044
Switch ties	171,498	43,085
Rail	1,149,481	765,460
Wood and coal	627,471	133,331
Printing and stationery	57,211	36,644
Dining cars and hotels	23,309	36,973
Materials at car builders left from repair contracts	591,936	.....
	$15,830,416	$6,166,133

Maintenance of Way Materials Before the Clean Up. Note Several Kinds of Material Piled Together

Huntington, W. Va., is the main freight and locomotive repair terminal of the system. In April, 1921, when it was only a division store and carried no roadway material, the book value of stock was $3,377,524, for disbursements of $525,319. In December, 1926, the stock at Huntington, then a general mechanical and roadway storehouse for the system, was down to $1,975,587, a reduction of more than 40 per cent. Disbursements were $1,078,680 or about double, the rate of stock turnover, as reflected by the ratio of disbursements to total stock available, was 34.49 per cent, and the service, 97.53 per cent, as determined by the percentage of items supplied locally on shop requisitions to the total number called for.

In April, 1921, the stock at all stores on the Chesapeake & Ohio was $10,126,950, and the disbursements, $811,309. In December, 1926, the stock was down to $3,142,402 or 70 per cent less, while disbursements were $1,501,919 or 85 per cent greater. At the same time, the rate of stock turnover per month, as reflected by disbursements to total stock available, was 38.17 per cent and the service performed, 99.39 per cent, on the basis of the percentage of items supplied on shop requisitions when called for to the total number. In the period of this change, the payroll of the stores and stationery department increased from $50,374 for April, 1921, to $66,979 for December, 1926, or 30 per cent, while the system purchasing the stores payroll increased from 595 employees and $67,007 in April, 1921, to 648 men and $74,300 in December, 1926, an increase of 45 men and $7,000 per month, the latter including increased rates of pay granted all classes of employees during the past five years.

A Sample of Conditions in Storehouses Before the Reorganization. The Second Floor of the Huntington Store

A Partial View of the General Stock of Locomotive and Car Lumber at Huntington. Note Office of Man in Charge of Section

An enumeration of the steps taken in reducing the

volume of stock and in attaining and holding to the exceptional condition in the supply work without seeming to have impaired or increased the cost of operations on the road, includes many practices. The first step was to co-ordinate the stores and purchasing work under a

Typical Arrangement of Outside Locomotive Castings at General Store Under Present Conditions

director having broad powers. The chief executive was satisfied that material and supply conditions could be put on a more economical basis. "A shortage of material to a reasonable extent," he wrote, "is more desirable than an over supply."

In large measure, the Chesapeake & Ohio is well-adapted to centralization of stock, but it had never been done. Each division had looked after its own requirements and every store had different kinds of material. What one store had was unknown to the other, and what each division roadway department had was distinctly an affair of its own. It was opportune to establish a general store where inspection and distribution could be concentrated, and where business-like stock control methods could be conducted. Huntington, W. Va., was selected for the purpose and all outlying stores were put on rations.

A system clean-up was inaugurated as a result of which $1,500,000 worth of material, some of which had been charged out but never used, was loaded and shipped to Huntington. A program of organizing this material and improving handling methods was begun. Activities were confined initially to the regular store stock. Later, with the exception of rail and ties, all construction and roadway materials not required on line for immediate use or protection were taken out of the jurisdiction of the division maintenance forces and gathered into Huntington. Eventually the jurisdiction was also extended to all telegraph, telephone, signal and motor car materials, which were concentrated in a general signal store, established at Barboursville, W. Va., 9 miles from Huntington. This stock has since been reduced from approximately $300,000 in 1923 to $72,000 at the end of 1926.

Material Re-classified

The material at Huntington and other points was all re-classified and given item numbers. A system of standardized stock books and the sectional plan of operation in material yards and storehouses was introduced and by gradual but deliberate stages, new racks and platforms, white interiors and an increasing number of new facilities for storage and handling came into existence, including a new storehouse at Huntington, another at Russell, Ky., the refitting of an old freight house at Barboursville for the signal store, and, more recently, excellent office quarters for the general stores at Huntington. The total cost of these facilities, excluding the general office quarters, which is also shared by the mechanical department forces there, had reached the figure of $354,233 by June, 1926, divided as follows:

Improvement to Stores, 1921 to June, 1926

Storehouses and additions to	$215,131.04
Racks, platforms, etc., for old storehouses	63,191.43
Mechanical facilities, 5 tractors, 86 trailers, 2 auto trucks, 7 electric trucks, 3 cranes and 4 gravity conveyors	69,510.59
Storage sheds, 3 for oxygen and acetylene, 1 for explosives, 2 for arch brick and 1 for lumber	6,400.00
Total	$354,233.06

Further articles about the purchasing and stores activities of this road will appear in later issues.—Editor.

Line Stocks Before the Improvements in Supply Work Took Place

Section 15a Repeal Proposed

Officer of shippers' organization drafts substitute for rate-making rule which would abolish recapture

WASHINGTON, D. C.

RAILWAY legislation received scant consideration at the session of Congress just closed, but a bill introduced just before adjournment by Representative Newton, of Minnesota, to repeal section 15a of the Interstate Commerce Act, may afford the basis for very active consideration at the next session. The bill was offered by Mr. Newton "by request" on March 2 so that it might be printed and perhaps used as a basis for discussion during the period before the next session of Congress begins in December. It is H. R. 17,390 and was introduced at the request of J. H. Beek, executive secretary of the National Industrial Traffic League, who explained that it represents an effort of R. C. Fulbright, chairman of the legislative committee of the league, to express in definite language what has been approved by the league in general terms.

A new rate-making rule is proposed in the bill in the following language:

Proposed New Rate-Making Rule

"In the exercise of its power to prescribe just and reasonable rates the commission shall initiate, modify, or adjust such rates so that under honest, efficient, and economical management and reasonable expenditure for maintenance of way, structures and equipment, carriers may have an opportunity to earn an average annual net railway operating income sufficent, as nearly as may be, as the basis of such credit, as in the judgment of the commission, may be requisite to meet the transportation needs of the country.

"In determining the amount of net railway operating income which the public interest requires that the carriers shall have an opportunity to earn, the commission shall, from time to time, fix a period of years for which average annual net railway operating income shall, as nearly as may be, equal the amount found by the commission necessary in the public interest and shall prescribe rules and regulations for the computation of such annual average income."

Many bills to repeal or amend section 15a have been introduced in Congress since the Transportation Act became a law but practically all of such bills were from radical sources and most of them were intended to bring about a reduction of the rates increased by the commission in 1920. During the Sixty-Eighth Congress some of them were considered seriously enough to result in rather protracted hearings, although none of the bills ever got out of committee. Some of those who were not satisfied with the rate-making rule of section 15a, but who desired the railroads to attain a state of reasonable prosperity, have felt that the time was not ripe to urge a repeal of the section for fear that an adequate substitute would not be found to take its place or that something worse might be adopted. Many railroad men as well as others have felt that the recapture provisions were wrong as well as unworkable, but that it would not be wise to suggest a repeal of the recapture clause while asking that the roads be allowed to retain the benefits of the rate-making rule.

The National Industrial Traffic League, while not approving section 15a as it was passed, accepted it as it came from conference, but in 1922 adopted a recommendation that a shorter and simpler section should be substituted. From time to time since then there has been general reiteration of this position but the league has not pressed Congress for action, fearing, it is understood, that the improvement in railway credit which followed the passage of the transportation act might be imperilled by apprehension of radical amendments in case 15a were opened for amendment. However, at the annual meeting of the league in November, 1926, the legislative committee was instructed to proceed.

For a long time the railroads and many other organizations have taken positions against changes in the rate-making section of the transportation act and a large part of the organized business of the country has given instructions to its association officers to resist amendments to section 15a. This includes the Association of Railway Executives, the Chamber of Commerce of the United States, the National Association of Manufacturers, the Railway Business Association, the American Bankers' Association, the American Investment Bankers' Association, and many national trade bodies as well as chambers of commerce.

The new bill, however, has already attracted the attention of some of these organizations and Alba B. Johnson, president of the Railway Business Association, has stated in a letter to members referring to H.R. 17,390, that, considering the source of this measure and the probability that Congress would give serious consideration to anything it might propose, he intended to refrain from reiterating opposition to amendment of the law until the general executive committee of the association could review the situation, and he requested members to suggest the same course to other associations to which they belong. He remarked that an important matter is the attitude of the Association of Railway Executives, some of whose members, he said, are known to desire a reconsideration of their opposition to any amendment of the section.

The bill, after repealing the present section 15a, contains six paragraphs of new language as a substitute. The first paragraph retains the definitions of rates, carriers, etc., as they stand in the present law and the second and third contain the substitute rule of rate-making as already quoted above. Paragraphs 4 and 5 provide for the termination of all pending recapture proceedings and the return of such sums as the commission may have recovered under the recapture provisions, while paragraph 6 would take the place of paragraph 17 of the present section 15a, reserving to shippers their right to reparation in case of overcharges or discriminatory rates. Paragraphs 4, 5, and 6 are as follows:

"(4) Upon the passage of this Act the commission shall terminate all proceedings then pending for the recovery of net railway operating income in excess of 6 per centum as provided in section 15a, paragraph 6, of the Act to regulate commerce as amended February 28, 1920, and return to each carrier all sums

which previous to the passage of this Act the commission may have recovered from such carrier under the said provision.

"(5) Upon the passage of this Act the commission shall cease to make cash loans to carriers under section 15a, paragraphs 11 and 12, of the Act to regulate commerce as amended February 28, 1920, and shall cease to lease equipment to carriers under paragraphs 13 and 14 of said section. If, at the time of the passage of this Act, there shall be any outstanding loans or equipment leases, or equipment on hand, under the provisions of said law, the commission shall liquidate the same in due course under such regulations as shall be formulated by it. If by the adjustment of balances, if any, upon outstanding loans and in the liquidation of equipment and outstanding leases there shall remain in custody of the commission a sum in excess of sums required for the return of recovered income to carriers as provided in section 4 hereby enacted, such sum shall be paid by the commission into the Treasury of the United States. If, however, after the liquidation of loans, equipment leases, and equipment, the sums required for the return of such recovered income shall exceed the sums remaining in custody of the commission, the commission shall certify to the Secretary of the Treasury the additional sum or sums required for such purposes and the Secretary of the Treasury is authorized to pay the said sum or sums to the commission out of funds not otherwise appropriated.

"(6) The provisions of this section shall not be construed as depriving shippers of their right to reparation in case of overcharges, unlawfully excessive or discriminatory rates, or rates excessive in their relation to other rates, but no shipper shall be entitled to recover upon the sole ground that any particular rate may reflect a proportion of the net railway operating income which the commission under the provisions of this section may judge requisite in the public interest."

Provisions of the bill embody a number of ideas which the National Industrial Traffic League has stood for. For example, the league has regarded the rule of rate-making as it stands as legislative rate-making and hence objectionable, on the ground that it gives instructions to the commission as to matters which it should be left to determine. It has favored a definition by Congress of the object of regulation as to meet the transportation needs of the country, leaving it to the commission to work out methods for sustaining railway credit necessary for that general objective. The bill as drafted by Mr. Fulbright, although it has not been specifically approved by the league, represents this idea as expressed on several occasions by aiming at a "net railway operating income sufficient, as nearly as may be, as the basis of such credit as in the judgment of the commission may be requisite to meet the transportation needs of the country."

"Fair Return" and "Value" Omitted

In other words, Congress would rescind its instruction to the commission to aim at a "return" designed to be "fair" to the carriers, limiting the instruction to adequacy of transportation to the shippers. The bill drops the words "fair return" and along with them the "value of the property" upon which such return is to be computed. The income is not directed to be expressed in percentage but in "the amount found by the commission necessary in the public interest."

The league has opposed the so-called recapture provisions on two grounds. One is that if the rates charged by any carrier are unreasonable they ought to be changed and if they are reasonable the carrier should be permitted to retain all that it can earn on those rates. The second is that, in effect, the insertion of the figure 6 per cent as a measure of income in excess of which the government would recover half, is a declaration of what is a fair return and hence is legislative rate-making and a justification to those who attack section 15a on the ground that actually, though not technically, the section is a "guaranty."

Also the league has resented the alleged interference of Congress with the administrative discretion of the commission, involved in the statutory recognition of rate groups of roads. Instead of this the new bill authorizes the commission "to prescribe rules and regulations for the computation" of the net income to be sought through regulation.,

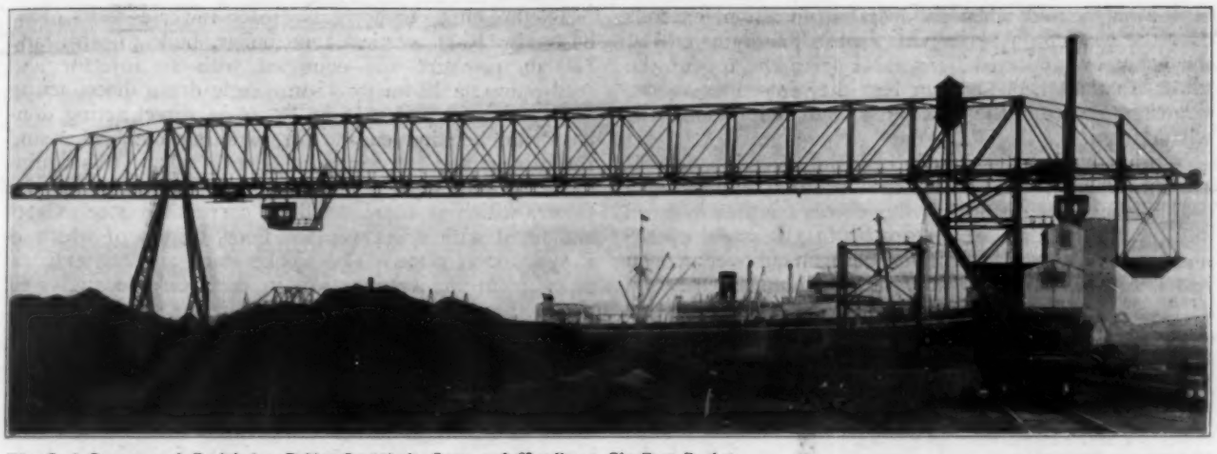
The disappearance of recapture and the freedom of the carriers to earn all they can on competitive rates is crystallized in the phrase that the commission is to adjust rates so that "carriers may have an opportunity to earn" the income found by the commission requisite. This phrase was in the original 1922 resolution of the league and is regarded as the original contribution of the league to the solution of the problem.

"Average Annual" Needs to Be Considered

With others, the league has recognized that, through what has since come to be considered as an oversight, section 15a was made to apply recapture to the income of any one year, thus tending to obstruct proper distribution of maintenance expenditures over periods exceeding one year. After the bill was enacted it was perceived by many who had had a part in framing it that in the interest of all concerned roads should be permitted to create maintenance reserves, charging maintenance when desired to the operating expenses of the year in which the money was earned, although expended in a leaner year. The bill now brought forward describes the income which the carriers are to have an opportunity to earn as "average annual" income and it would be provided that in determining the amount which the public interest requires that the carriers shall have an opportunity to earn, the commission shall, "from time to time, fix a period of years for which average annual net railway operating income shall, as nearly as may be, equal the amount found by the commission necessary in the public interest."

In accordance with the action taken by the league at its 1926 annual meeting, the provisions terminating the recapture proceedings provide for the return to each carrier of all sums heretofore recovered. It is also provided that the commission shall cease to make cash loans to carriers under section 15a. However, the commission has not yet made any loans under 15a, as the amounts paid to it under the recapture clause and deposited by it in a general railway contingent fund have so largely been made under protest. The loans made by the commision have been from the revolving fund created under section 210 of the act.

Pennsylvania Locomotive No. 3296 which was Operated in Yard Service at Olean, N. Y., During the Months of October, November and December, 1926, without Having the Fires Cleaned—Approximately 30 Tons of Coal Were Saved During That Time



The Coal Storage and Reclaiming Bridge Is 440 ft. Long and Handles a Six-Foot Bucket

B. & M. Erects Large Coal Handling Facilities at Boston

New unloading towers and 440-ft. storage and reclaiming bridge will effect large savings

WITH the completion of the Boston & Maine's new tidewater coal-handling facilities at Mystic Wharf, Boston, at an expenditure of approximately $500,000, that road now controls one of the largest mechanical layouts for transferring coal from vessels to cars or storage, of the many similar plants along the eastern seaboard. This layout, which is in reality the result of the modernization of the former facilities at this point, consists of five unloading towers operated along a wharf 2,000 ft. in length, and a traveling type coal storage and reclaiming bridge which can be operated over an area capable of storing 100,000 tons of coal. The unloading towers have a total capacity of 7,500 long tons in eight hours and can unload the largest steamers received at the wharf within one day. The amount of coal to be handled by these towers annually is expected to reach 1,500,000 long tons.

The coal received at the Boston & Maine's Mystic Wharf property, which lies along the west side of the Mystic river, is entirely mine run coal, mined in the south and for the most part shipped from the ports of Newport News and Norfolk, Va., in vessels operated under the control of the Boston & Maine. This coal, arriving in regular shipments, is unloaded by the unloading towers direct from the ships into cars or to storage, for both railroad use and for distribution to industries in Boston and northern New England. Of the 1,400,000 tons of coal used yearly by the Boston & Maine, approximately 800,000 tons are received through this port.

Old Facilities Uneconomical and Worn Out

The old facilities at Mystic Wharf consisted of eight unloading towers, five of wood and three of steel construction, these towers carrying 1¼-ton buckets and having a combined average eight-hour capacity of approximately 4,800 short tons. These towers discharged directly into cars for shipment, and originally were supplemented with a 3800-ft. cableway equipped with a bucket for carrying coal to a large storage area behind the towers. Loading of the coal from storage into cars was then accomplished by means of a steam shovel or a locomotive crane equipped with a clam shell bucket. In recent years, owing to the condition of the cableway and the high cost of its operation, its use was discontinued and all storage coal received at the wharf has been loaded into cars and subsequently unloaded by a locomotive crane to storage space on nearby property. When taken out of storage it was then necessary to reload the coal into cars by a steam shovel or a locomotive crane. This slow and uneconomical method of operation, together with the poor condition and small capacity of the old towers, led to the construction of the facilities recently completed.

The new layout at Mystic Wharf involved the construction of three new towers, the modernization of two of the old steel towers, and the construction of the storage and reclaiming bridge. The three new unloading towers are of steel construction throughout and operate on the rail runways used by the old towers, the rails of which are spaced 23 ft. center to center. All three of these towers are operated by steam and are grouped together so as to form the most easterly units of the coal unloading facilities. Each tower under normal operation has a capacity for unloading mine run coal from ships or barges at a rate of 400 short tons per hour, and through a system of chutes and steam-operated gates can place the coal directly into cars on either of two tracks beneath the towers, or carry it to a cushion pile back of the towers by means of a belt conveyor.

The unloading of coal from the ships is accomplished by means of a 6,000-lb. capacity grab bucket which is suspended from a trolley carriage which operates on a structural steel boom. This boom has a pivot connection to the tower at one end well above deck clearance

of the ships, and when in operating position, extends over the water in a horizontal plane. The outer end of the boom is supported by a cable from the top of the tower, so that the boom can be either raised or swung sidewise to permit the free passage of ships along the wharf front.

When a loaded vessel is docked, the unloading towers are moved along the wharf into position opposite the coal hatches. The booms of the towers are then lowered into position and unloading can begin. In actual operation the trolley carrying the bucket is run out over an open hatch, and the bucket lowered and filled, and then raised as the trolley is returned to the tower. To speed this operation the operating equipment of the trolley and bucket are under entirely separate control so that the bucket can be raised or lowered and opened or closed independent of the location or movement of the trolley. This makes possible the lowering of the bucket while the trolley is moved out and likewise, the raising of the loaded bucket as the trolley returns to the tower. A tag line attached to the bucket prevents its revolving while in operation and at the same time, by changing the connection of the line on the bucket, makes it possible to turn the bucket so as to open it either longitudinally or transversely with respect to the trolley runway.

The coal, as hoisted from the ship by the bucket, is discharged directly into a coal hopper of 60 short tons' capacity which is located in the tower. This hopper is constructed of heavy steel plates which are rigidly stiffened and braced to withstand the impact of the coal as it is dropped from the bucket. With a hopper of this capacity, a temporary storage space is afforded in the tower so that unloading of the vessel may continue while cars for loading are being moved along or shifted about.

Directly beneath the hopper is a chute with an adjustable apron for loading directly into cars on the inside track of the two tracks beneath the towers. Loading of cars on the other track, or dumping on the cushion pile, is accomplished by means of two steam-operated gates in the main chute which by-pass the coal to a second chute serving the outside track or to a small steel hopper which feeds the coal out on the belt conveyor. In this way coal can be distributed to three points, which makes possible a continuous operation of the towers, even though cars for loading are not available.

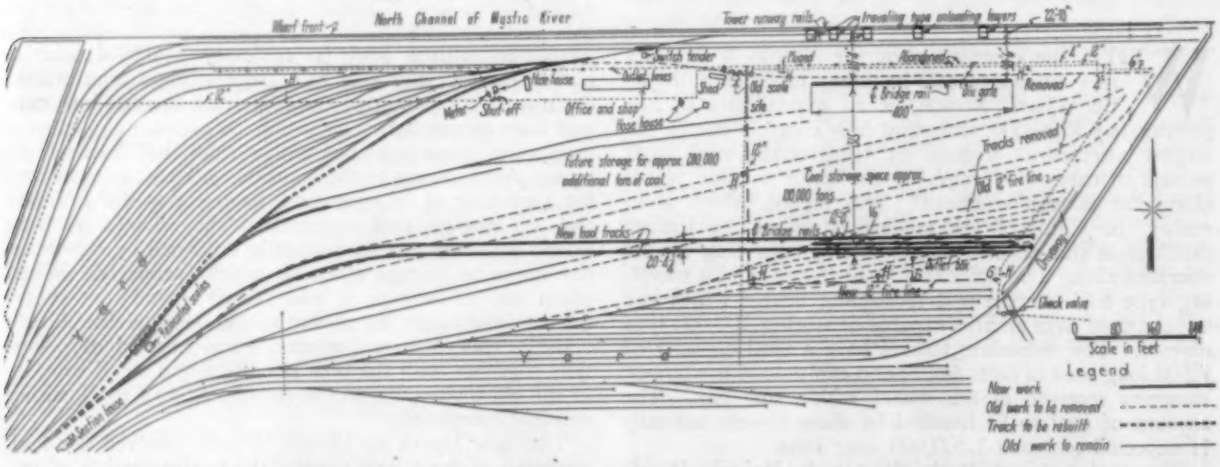
The operating equipment of each tower consists of an 84-in. by 16-ft. vertical type boiler, built to withstand 150 lb. pressure and equipped with an injector and feed pump; a 12-in. by 15-in. single drum direct-acting trolley engine; and a 16-in. by 24-in. direct acting double drum hoisting engine for handling the bucket and for raising and lowering the boom. All of this equipment is housed in a machinery room located in the tower, which is constructed of corrugated steel sheets and fitted with a heavy plank floor, on top of which is a ¼-in. steel plate. The smoke stack and the exhaust pipes from the engines are in each case located well above the roof of the machinery room so that smoke, escaping steam or spray will not obscure the view of the tower operator.

The operating equipment of each tower consists of a patented arrangement of levers so located in a small sheet steel and glass operating cabin that the operator has a clear view of every movement of the boom, trolley and bucket. Access to this cabin and to the machinery house is gained by means of an outside stairway which is fitted with pipe railings on both sides.

Each tower is supported by 16 chilled tread, double flanged 30-in. track wheels which are grouped into four sets of four wheels, one set being located at each corner of the tower. These wheels are mounted on hammered steel shafting with large marine babbitted journals. Eight of the wheels are connected through steel spur and worm gearing and machine steel shafting to a 7½-in. by 10-in. propelling engine which has sufficient power to move the tower in either direction at the rate of approximately 50 ft. per minute.

In order to secure the towers against movement along the runway while unloading operations are in progress, whether due to wind pressure or the swinging motion of the bucket, each tower is fitted with four manually-operated screw-type rail clamps which can be fastened to the rails at the foot of the tower. Movement of the coal cars to and away from the towers is accomplished by means of car pullers, one of which is located at the base of each tower. Each of these car pullers is operated by a 6¼-in. steam engine and has capacity for pulling a train of cars weighing 980 tons at the rate of about 50 ft. per minute. The cable with each puller is of sufficient length to make a pull of 480 ft. from the center of the tower.

The modernization of the old steel towers consisted for the most part in the installation of heavier duty



Plan of the Boston & Maine's Mystic Wharf Property Where the New Coal Handling Facilities Were Installed

operating machinery and the replacement of the 1¼-in. coal buckets with new ones having a capacity of three tons. Owing to the increased weight of this equipment and the heavier loads to be handled, some repair work was also necessary on the towers as well as the strengthening of some of the steel members.

440-Ft. Traveling Type Bridge Handles a 6-Ton Bucket

Supplementing the battery of unloading towers in the new layout is the coal storage and reclaiming bridge which is located directly back of the tower runways, the nearest end being about 100 ft. from the edge of the wharf. This bridge is a 440-ft. Pratt truss supported on two towers placed 315 ft. center to center, each resting on rail runways 400 ft. long. Traveling over these runways the bridge covers an effective area for the storage of from 80,000 to 100,000 tons of coal, which can be increased to about 320,000 tons with the construction of additional trackage. The handling of the coal is effected by a large grab bucket of six short tons capacity which is suspended from a trolley carriage which in turn operates on a 425-ft. trolley track beneath the floor structure of the bridge.

The towers supporting the bridge are of two distinct types, one, a single pier leg which is rigidly connected to the bridge and designed to resist sway or longitudinal thrust imposed on the bridge, and the other, a simple shear leg or rocker bent tower with a pivoted connection to the bridge so as to reduce the stresses in the bridge and towers that would be set up if one end of the bridge were moved ahead of the other.

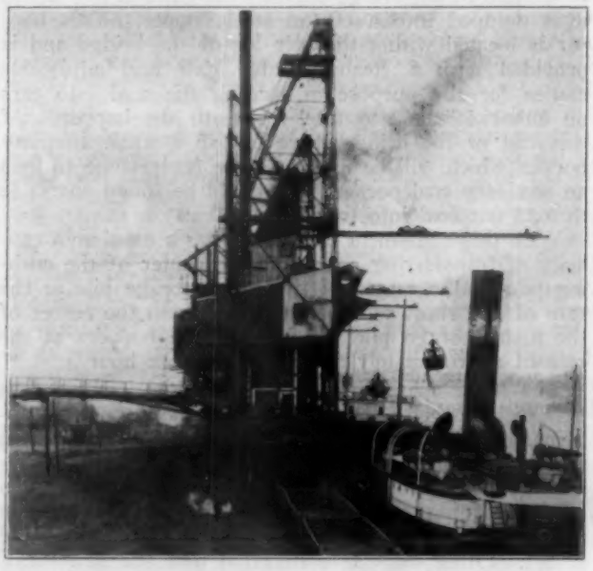
Two of the New Coal Unloading Towers with the End of the Storage Bridge at the Right

Both of these towers are 61 ft. in height from the top of the rail runway to the bottom of the lower chord of the bridge.

In addition to these two towers, the bridge is also fitted with an auxiliary leg, called a portal leg, which is located 16 ft. outside of the pier leg tower, to which it is rigidly connected. This auxiliary leg, with the pier leg, serves to support the operating machinery of the bridge, which is located in a machinery house between these supports, about 25 ft. above the ground. Like the two bridge towers, this leg also rests on a rail runway. In order to provide for the movement of the bridge, the towers are carried on eight 16-in. chilled tread wheels which operate on babbitted journals.

The bridge runways are built up of 130-lb. rails laid on 12-in. by 14-in. longitudinal stringers. Supporting these are 12-in. by 12-in. by 4-ft. cross ties, spaced 18 in. center to center and solidly tamped on 4 ft. of broken stone ballast to give a firm bed. All of the bridge runways have been carefully surfaced and accurately lined so that there is no fluctuation in the distance between rail centers.

The movement of the bridge along the runways is effected by a 10-in. by 12-in. reversing type steam engine, direct connected to the wheels of the bridge towers through spur and bevel gearing and steel shafting. With this unit it is possible to move the bridge along the runway in either direction at the rate of about 50 ft. per minute. The control of the movement of the bridge, as well as the operation of the trolley and coal bucket, is handled by one man from either of two operating cabs located toward either end of the bridge. The operating equipment consists of a special system of levers so arranged independent of each other that it is possible to hoist or lower the bucket and open or close it without regard to the motion of the trolley, thereby greatly speeding up the handling capacity of the bridge. The power unit of the trolley carriage is a 12-in. by 15-in. single drum direct acting reversing trolley engine, while the bucket is operated by a 16-in. by 24-in. double drum, double acting hoisting engine. Supplying power to these units is an 82-in. by 14-ft. vertical type boiler supplemented by suitable steam-operated air compressors. All of this equipment is located in the one machinery house.



The New Bridges Transferring Coal from Boat to Car

In order to hold the bridge in any specific location or to prevent its movement while coal is being handled, both the pier leg and the shear leg towers are equipped with two automatic rail clamps. When the bridge is standing still, these clamps are normally in position on the rails, any tendency of the bridge to move by other than its own driving power causing the clamps to increase their holding power. When steam is applied in the bridge driving engine, however, the clamps are automatically released and held free of the rails until the

movement of the bridge is stopped by shutting off the steam.

Simple Operation of Bridge Permits Large Capacity

When the bridge is in operation transferring coal from the cushion pile back of the coal unloading towers to the large storage area, the bridge is moved to the point desired, the trolley carrying the bucket is run out over the cushion pile, the bucket is loaded and is then carried back to any point under the bridge and dumped. In reclaiming the coal from storage, the bucket loads at any point from the storage pile and is then carried to the end of the bridge opposite the cushion pile where it is dumped into a 60-ton steel hopper. This hopper is located within the pier leg of the bridge and is provided with a steam-operated gate and adjustable chutes for the purpose of loading the coal into cars on either of the two tracks beneath the hopper. At this end of the bridge there is also a small auxiliary hopper which will be used at some future time to load an auxiliary coal pocket if it should be found advisable to load out coal into trucks.

With this equipment the bridge has a maximum capacity of transferring coal from the center of the cushion pile to the center of the main storage pile at the rate of 700 short tons per hour, or from the center of the main storage pile to either of the hoppers at the rate of approximately 600 short tons per hour.

The track changes involved in connection with the new facilities consisted principally in the removal of approximately 14,000 ft. of car storage and yard tracks which interfered with the location of the bridge runways in the coal storage area, and the construction of two 1920-ft. loading tracks at the reclaiming end of the bridge and a new lead to the present loading tracks along the wharf. Other work in connection with the new facilities consisted of smoothing up and coal storage area, the relocation of a track scale and the installation of about 950 ft. of 12-in. water main, with hydrants at frequent intervals to afford fire protection to the new facilities and coal to be put in storage.

New Facilities Will Benefit Both Railroad and Industries

The modernization of the Boston & Maine's Mystic wharf property will make possible large economies in the handling of the company's coal and will benefit the industries served by the Boston & Maine through the assurance of an adequate and dependable coal supply. It will also benefit the commercial coal companies which it serves, through the more rapid and economical handling of their coal and the more prompt release of vessels.

In addition to these economies which will likewise accrue to the Boston & Maine, the provision of the large storage space served by the storage and reclaiming bridge will effect a large saving annually. In recent years, owing to the lack of such facilities, large quantities of coal have been stored at various points on the system which has in most cases necessitated the rehandling of the coal by steam shovels or locomotive cranes with clams shell buckets. This new reserve, which will hold from 80,000 to 100,000 tons of coal, will to a large extent minimize the amount of coal stored elsewhere on the system, thereby reducing the amount of rehandling with a consequent substantial saving. The new facilities will also permit the more intensified use of company coal cars through their more expeditious loading, and thereby reduce the number of cars retained in this service.

The new facilities at Mystic Wharf were installed by the Boston & Maine under contract with John H. Proctor & Co., Boston, Mass., while the actual erection work was done by the Mead-Morrison Manufacturing Company, East Boston, Mass., which company also manufactured and installed the hoisting and operating equipment. The entire project was undertaken and completed under the general supervision of F. C. Shepherd, chief construction engineer, G. L. Huckins, construction engineer, being in charge of the work.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended February 26 amounted to 923,849 cars, an increase of 10,914 cars as compared with the corresponding week of last year, and of 59,753 cars as compared with 1925. This was a decrease of 37,000 cars as compared with the preceding week, but the week included the Washington's Birthday holiday. Decreases as compared with the corresponding week of last year were reported from the Eastern, Allegheny and Southern districts, while the other districts showed increases. Increases were also reported in the loading of grain and grain products, livestock, coal and merchandise, but other commodity classifications showed reductions. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading Week Ended Saturday, February 26, 1927

Districts	1927	1926	1925
Eastern	214,505	220,184	200,966
Allegheny	184,708	187,950	178,488
Pocahontas	56,664	51,385	40,899
Southern	153,896	154,790	145,828
Northwestern	110,906	108,407	110,271
Central Western	129,213	120,004	125,512
Southwestern	73,957	70,215	62,132
Total Western District	314,076	298,626	297,915
Total All Roads	923,849	912,935	864,096
Commodities			
Grain and Grain Products	44,096	39,793	38,321
Live Stock	27,494	26,642	28,892
Coal	201,959	180,470	151,569
Coke	12,296	16,607	12,793
Forest Products	67,913	74,002	79,496
Ore	9,621	10,818	11,473
Mdse. L. C. L.	237,199	237,144	230,461
Miscellaneous	323,271	327,459	311,091
February 26th	923,849	912,935	864,096
February 19th	960,873	932,281	925,886
February 12th	968,317	917,625	903,935
February 5th	970,892	914,491	929,130
January 29th	950,969	925,696	897,368
Cumulative Total, 9 Weeks	8,348,680	8,105,588	8,079,996

The freight car surplus for the period February 15-22 averaged 273,153 cars, an increase of 13,597 cars as compared with the preceding period. This included 143,948 box cars and 78,069 coal cars.

Canadian Loadings

Revenue car loadings at stations in Canada for the week ended February 26 were greater than the previous week by 892 cars and 5,274 cars heavier than in the same week last year.

	Total for Canada			Cumulative totals to date	
Commodities	Feb. 26, 1927	Feb. 19, 1927	Feb. 27, 1926	1927	1926
Grain & Grain Products	7,348	6,619	6,903	68,044	61,171
Live Stock	1,894	1,779	1,820	16,311	15,928
Coal	5,977	6,979	4,640	53,821	42,602
Coke	483	365	745	3,260	4,597
Lumber	3,170	3,246	3,331	23,017	24,220
Pulpwood	6,809	6,507	3,916	44,497	32,420
Pulp and Paper	2,217	2,060	2,821	17,550	21,629
Other Forest Products	1,908	3,763	4,093	26,986	28,723
Ore	1,408	1,476	1,442	10,898	11,533
Merchandise, L. C. L.	16,147	15,961	14,765	123,809	114,285
Miscellaneous	11,487	11,199	11,098	87,287	84,445
Total Cars Loaded	60,848	59,956	55,574	475,480	441,553
Total Cars Rec'd from Connections	38,739	40,793	36,975	296,124	280,332

Grain Rate Revision

WASHINGTON, D. C.

THE Interstate Commerce Commission on March 8 made public its decision in the northwestern grain rate case, finding not justified a revision of the rates proposed by the railroads, including mainly increases, but reserving complaints as to the reasonableness of the existing rates for consideration in connection with its general rate structure investigation, No. 17,000, part 7. Upon the record the commission found that the carriers had not sustained the burden of justifying the proposed increases in rates on grain, including flaxseed, and grain products from to and between points in Minnesota, North Dakota, South Dakota, Iowa, Wisconsin and Illinois principally from North Dakota and Minnesota to certain of the larger terminal markets, and it ordered the cancellation of the schedules which had been cancelled. The complaints were as to the reasonableness of the rates from North Dakota and South Dakota points on grain and grain products, and on flaxseed from North Dakota points to Minneapolis and Duluth, Minn., and various other markets, alleging that the rate adjustment results in undue prejudice to North Dakota and South Dakota points, in undue preference to Minnesota points, and in unjust discrimination against interstate commerce.

"It is evident, especially in the light of the Hoch-Smith resolution," the majority report by Commissioner Eastman says, "that the rate structure in the northwestern and western trunk-line regions requires an analysis and investigation of a more thorough and fundamental character than it has yet received. It is also clear from the record in this case that the rates on grain and grain products, particularly to the primary markets, are deserving of a consideration, from the standpoint of relative earnings and fair share of the transportation burden, which perhaps has not hitherto been sufficiently given them. We have pending No. 17,000, part 7, Grain and Grain Products within Western District, hereinafter called the general investigation, which embraces the rates on grain and grain products in the entire western district and from that district to the ports of the country for export. That proceeding will afford the opportunity for such consideration. * * * Our conclusions herein, in respect to both the proposed rates and the complaint proceedings, are without prejudice to any different conclusions that may be reached in the general investigation."

Commissioner Hall Dissents

Commissioner Hall dissented, saying that in his judgment the carriers have in the main justified the corrective rates which they propose. Commissioner Aitchison dissented, in an opinion in which Commissioners Woodlock and Taylor joined, asserting that the record shows "widespread, long-continued violations of laws which unduly prejudice great sections of the country and unduly prefer others, for which there is no adequate justification," and he criticized the majority for postponing the issue instead of readjusting the rates on the present record. "The majority report," he says, "leaves the farmer in South Dakota and portions of North Dakota with longer hauls to market, paying rates that are on a higher relative basis than his Minnesota neighbor, and the irony of it is that such rates were largely prescribed or approved by us as reasonable. . ."

The majority report includes a discussion of the effect of the Hoch-Smith resolution, in part as follows:

When, therefore, the carriers in an investigation and suspension proceeding propose what in substance amounts to a general increase in rates over a large area on agricultural commodities which have been shown to be affected by depression, they must clearly demonstrate that such increase is justified under the law including the provisions of the resolution.

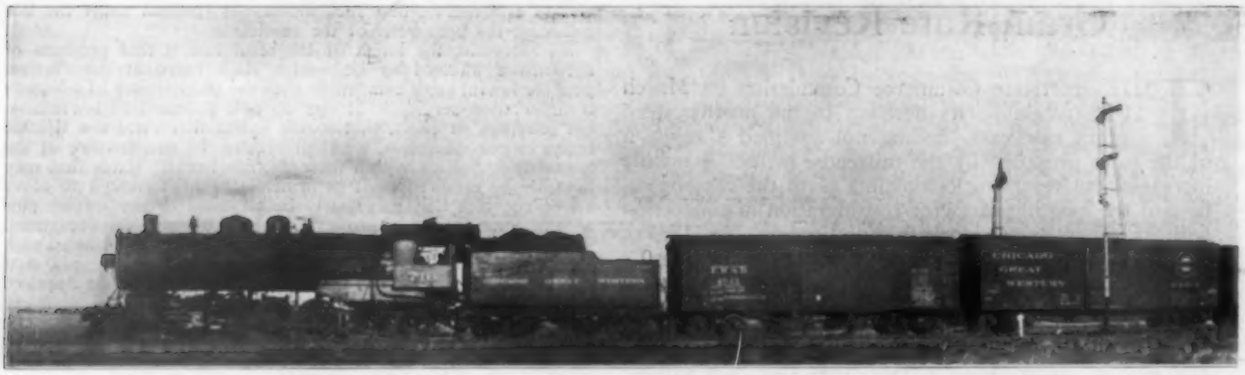
As aforesaid, the intent of the resolution is that products of agriculture affected by depression shall move at the "lowest possible lawful rates compatible with the maintenance of adequate transportation service." It sets no new standard of lawfulness, but provides, in effect, that to the extent that there are flexible limits to our discretion, we shall require the maintenance of the lowest rates falling within those flexible limits. Rates that may lawfully be required must in principle be high enough to cover all of the cost that may fairly be allocated to the service plus at least some margin of profit. But it has always been recognized that the burden of transportation may reasonably be adjusted with some regard to the value of the service, in other words, that the higher grade, more valuable commodities may be required to pay a greater margin of profit than those that are of lower grade and less valuable. The substance of the provision of the resolution quoted above is that agricultural products affected by depression shall in this respect be included in the class of most favored commodities, to such extent, at least, as may be "compatible with the maintenance of adequate transportation service."

As has been seen, the carriers' attempted justification of the suspended rates depends primarily and chiefly upon rate comparisons. Considering this showing alone, they have made out a strong case. The comparisons are very numerous, cover a wide range, and include many rates which we ourselves have fixed. They warrant the conclusion that, judged by other rates from the grain fields of the western territory to primary markets, the present rates on grain and grain products from North Dakota and Minnesota points to Minneapolis and Duluth are in general low, and that the proposed rates are in general not unduly high. There is less evidence as to the rates which move these commodities out of the primary markets, and there seems some reason to believe that certain of these latter rates, which are more subject to competitive influences, are relatively much lower than the initial rates to these markets.

It is significant, however, that the carriers' case practically ends with this showing. They have, indeed, endeavored also to show that the movement of grain from the North Dakota and Minnesota farms is attended by various unfavorable transportation conditions. But little attempt has been made to translate these conditions into terms of cost of service or to show that they are essentially more burdensome than the conditions which attend the movement of many other important forms of traffic. No evidence was offered by the carriers, such as they frequently present in rate cases, with a view to showing that the earnings of the rates which they are seeking to increase are either intrinsically low, or low by comparison with the earnings derived from the rates on other commodities. No attempt was made to show the actual or the relative cost of service.

On the other hand, the evidence as to relative earnings and cost of service which was presented by the North Dakota complainants, while not free from defects and susceptible to criticism, does clearly warrant the conclusions that the present rates of the respondent carriers on grain and grain products are by no means unremunerative rates, and that they yield earnings which compare quite favorably with the earnings which these carriers derive from the rates on many other forms of traffic and with the earnings which other carriers in the western group derive not only from other commodities but from grain and grain products as well.

The Hoch-Smith resolution has brought to the forefront the question of the distribution among commodities of the transportation burden, thus emphasizing the need for considering the relative costs of service and the relative earnings of the various kinds of freight traffic, difficult as this task may be. The method which the carriers usually select to secure additional revenue, when needed, is to make a horizontal increase in all rates, thereby avoiding the embarrassment of distinguishing between various kinds of traffic. In *Revenue in Western District, supra*, the carriers in that district made such a proposal. We found that important carriers in the northwestern region and western trunk-line territory were not earning a fair return, but that no emergency had been shown justifying the expedient of a horizontal increase in all rates. We further found that there are many inequalities in the rate structure existing in portions of the western district which should be corrected, and that it is the "right and duty of the carriers to take the steps necessary to correct improper rate relations as they may be found to exist, and to supply revenue deficiencies by initiating suitable changes in rates." Upon argument of that case the carriers expressed the opinion that class rates in western trunk-line territory should be increased, and also livestock rates throughout the western district, but stated that, except for livestock, they knew of no commodity rates which should be increased by other than a horizontal advance applicable to all rates. They have here initiated substantial increases on grain and grain products, and in another proceeding they are proposing increased rates on cheese. It will be noted that with the exception of the class rates, all these proposed increases relate to agricultural products.



C. G. W. Train Leaving the Yards at Oelwein, Iowa

The Chicago Great Western Keeps Its Cars Moving

Supervision and education of employees have nearly doubled daily mileage in six years

DURING the last six years the Chicago Great Western has increased its average miles per car per day more than 75 per cent. In other words, it has brought the 1920 average of 23.7 up to 42.9 in 1926. Furthermore, for 16 consecutive months, beginning with August, 1925, the monthly average exceeded 40 miles per day, with a high record for one month of 49.6 in October, 1925.

This result has been accomplished by taking advantage of physical and traffic conditions that favor high average car-miles, by a vigorous campaign among employees to bring them to a realization of car values, by increasing the speed with which foreign empties are delivered to connections, by expediting the movement of stock cars, by efficient yard operation, and by close attention to many small but none the less important details.

Being a bridge route, without complicated and involved terminal problems in the large cities, the Chicago Great Western has distinct physical advantages for car-mile production. It operated 1,496 miles of lines in 1926, of which less than 25 per cent is branch line mileage. Its east and west line runs from Chicago to Omaha and its north and south line from Minneapolis and St. Paul to Kansas City. These two lines cross at Oelwein, Iowa. A cutoff, from Hayfield, Minn., to Clarion, Iowa, gives it a direct line from the Twin Cities to Omaha as well. The line is double tracked from Oelwein, Iowa, to Aurora, 11 miles, and from Kent, Ill., to Galena Junction, 33 miles, while from Galena Junction to Dubuque, Iowa, 14 miles, Great Western trains operate over double track lines of the Chicago, Burlington & Quincy and the Illinois Central. For operating purposes, the railroad is divided into four divisions, which include 20 districts.

The hub of the road is at Oelwein, for, as will be seen from the accompanying map, each of the four divisions ends there. All through traffic must pass through this terminal, which is ranked as a division and is in charge of a division superintendent.

The Chicago Great Western has comparatively few industry tracks. At its largest terminus, Chicago, for instance, most of its carload business comes from the three belt lines, with which connections are made at Chicago Transfer, Bellwood, and Ingalton. The Great Western has yards at each of these three points; the principal one at Chicago Transfer, where connection is made with the Belt Railway of Chicago, having a capacity of 2,500 cars. The yards at Bellwood, where connection is made with the Indiana Harbor Belt, and at Ingalton, with the Elgin, Joliet & Eastern, are merely interchange yards. The physical advantage of these close connections has had a beneficial effect on the daily car mileage and by close supervision the Great Western has been able to keep cars moving rapidly through this terminal.

A large number of the cars received from connections at Chicago are for delivery to other connections at the western, northern and southwestern terminals while the cars for local stations beyond Oelwein are comparatively few. Under these circumstances, the yard force at Chicago Transfer is able to make up westbound trains in such a manner that a minimum amount of switching is required at Oelwein. With the exception of Dubuque, there is no city of any size on the Eastern division and to this, coupled with close supervision by the operating officers, may be attributed in part the high car-mile record of the Eastern division, which averaged 81.5 miles per car per day during 1926.

Facilities Efficiently Utilized

Under the direction of Samuel M. Felton, formerly president and now chairman of the board, a policy of using facilities to the fullest possible extent has been maintained for years, and it has been continued under the administration of the new president, Colonel N. L. Howard, who was elected to that office on November 2, 1925. An extensive program of double tracking between Chicago and Oelwein which had been begun before the present company took over the property was curtailed and efforts concentrated on securing the maximum use of existing facilities instead. The new management

C. G. W. Train Leaving the Yards at Oelwein, Iowa

found that on the Eastern division, freight crews ran between Chicago and Oelwein, 248 miles, this extreme length of run resulting in trains being operated with light tonnage to avoid being laid out by the 16-hour law, thereby increasing the number of trains unduly and creating congestion on the single track line. This was remedied by dividing this 248-mile district and establishing a new terminal at East Stockton, Ill., adding automatic signals and putting larger locomotives in service with the result that the Eastern division now handles a greatly increased traffic readily and leads all other divisions in car-miles. It was vitally essential that this and other operating economies be made effective, since the entire mileage of the Great Western lies between Chicago and the Missouri river, a notoriously poor territory as far as divisions of through rates are concerned.

The Nature of the Traffic

The Chicago Great Western is primarily an overhead, rather than an originating carrier, 63 per cent of the total traffic handled in 1926 coming from connecting lines. Of the total traffic, both local and through, during 1926, the following were the principal commodities handled: Grain, flour and feed 18 per cent; perishable products including fresh fruit and vegetables, fresh meats, packing house products and egg and dairy products 7 per cent; forest products 7 per cent; products of mines 24 per cent and refined petroleum and its products, 12 per cent.

Much of the traffic originating on the line also requires prompt movement for it consists very largely of live stock and agricultural products. Live stock shipments, preponderantly of hogs, amounted to 20.4 per cent of the total traffic originated during 1926, and grain, flour and feed, 23.2 per cent.

About one-eighth of the total carload traffic consists of commodities handled in privately-owned cars, traffic that is highly competitive, and requires expeditious handling. The bulk of this is through business, as is evidenced by the fact that the private line car mileage of the road is approximately one-third of all freight car mileage. Thus, the character of the traffic handled tends to encourage the prompt movement of cars.

The Car Miles Campaign

One of the most important measures contributing to the improvement in operation was a joint campaign for increasing car-miles and reducing per diem, which was put into effect some years ago and has never been permitted to become a dead subject. Some of the means employed in awakening the entire working force to the true appreciation of car values were adapted from those used with success in the "Safety-First" movement. Losses due to unwise or negligent car handling were identified and measured and the exact causes determined wherever possible. In the general educational campaign, circulars, bulletins, publicity in the employees' magazine and discussions at special meetings were applied, as well as terminal, division, and system staff meetings. A friendly rivalry between divisions was brought into being by the issuance of monthly car performance sheets which show the division results in considerable detail. These are watched for eagerly and the friendly competition shows a very lively interest in car conservation. By this means the standard forms were raised from the status of routine reports made because a superior officer asked for them to that of reports possessing real meaning and a positive money value.

Through the well directed educational campaign, supplemented by personal talks to individual employees by operating officers in general and car service officers in particular, every employee concerned has been informed as to the vital necessity of keeping cars moving, not only for the duration of any particular campaign, but all the time. The Great Western, by reason of its comparatively small and compact organization, has been able to keep the matter of increased car-miles constantly in the minds of its men. As a result employees in all branches of the service have become alive to car values, to the fact that an idle car is not merely a car at rest or a dormant facility like a closed station, but is a direct liability.

One of the illustrations used in the campaign is a comparison of every single car to a taxicab with a taxi-meter registering hours and days against the railroad. By changing the ideas of the employees as to what cars really are, work habits were acquired that aided very materially in establishing prompt car movements. Instead of regarding the cars along with the track, bridges and buildings, the present view is that they are machines in a factory with the peculiarity that most of the cars are hired by the day instead of being owned, with the result that idleness means not only stoppage of earnings but daily cost without offset in earnings.

Since nearly one-fifth of the traffic originating on the Great Western is live stock, the handling of stock cars offered a fruitful field for improvement and consequent saving in car-miles. An intensive study was given to the problem and more efficient handling introduced, with the result that this traffic is now handled with a minimum use of cars and minimum delay to the cars used. Empty stock cars are distributed by the way freight trains. Stock pick-up trains are operated tri-weekly on the Western, Northern and Southern divisions, starting light and cleaning up the divisions, bringing loaded stock cars

into Oelwein. Here the stock is assembled into through trains for Chicago, which are operated daily except Friday and Saturday. These trains leave Oelwein between 10:30 a.m. and 1 p.m. and are so scheduled as to reach Chicago in time for delivery at the stockyards before 8 o'clock the next morning. Two pick-up stock trains are also operated on the Eastern division triweekly, one from Oelwein to Stockton and the other from Stockton to Chicago.

Per Diem Reduction Aids Car-Miles

The number of revenue freight cars owned by the Chicago Great Western is 8,860. Inasmuch as the average number of freight cars on the line each day for the past two years has amounted to slightly over 10,000, it will be seen that the car balance requires constant supervision to keep the per diem payments down to a reasonable figure. A constant effort is, therefore, made to impress all employees concerned with the necessity of delivering foreign cars to connections as speedily as possible.

Comparative Statement of Miles Per Car Per Day

Month	1920	1925	1926
January	18.7	40.0	42.2
February	21.0	40.0	43.2
March	21.3	40.6	43.0
April	16.4	40.4	42.1
May	21.9	38.8	41.3
June	25.5	36.0	40.8
July	26.5	38.8	43.3
August	25.8	41.9	41.0
September	25.8	46.0	45.3
October	30.0	49.6	46.2
November	29.2	45.7	42.6
December	29.1	42.1	39.4
Yearly Average	23.7	41.7	42.9

As a means to this end, as soon as a foreign car arrives at any station on the railroad for unloading, the agent at that station wires the office of the superintendent of transportation for home routing instructions for it when empty. By the time the car is unloaded, a reply is received from the superintendent of transportation giving the necessary information and the empty is started on its way home in the next available train. This is one of the reasons for the comparatively large percentage of empty to total freight car miles, which was 34.7 in 1926. Since a comparatively small percentage of the freight handled originates on its own line, the Great Western found it inefficient and costly to follow the more general practice of holding foreign empties for loads in the direction of home. The present system eliminates a great deal of per diem which was assessed under the former system, for, when agents waited until the car was unloaded before requesting home routing, empties were delayed from three days to a week before starting on their return journey, during all of which time, the car was standing idle and per diem accruing. This prompt handling of foreign cars after unloading has had a very material and beneficent effect on the miles per car per day. It has also had an effect on the operating expenses of the way freights by keeping the station tracks clear of empties and reducing the switching time at local stations.

Miles Per Car Per Day—By Divisions

Division	1925	1926
Eastern division	82.9	81.5
Western division	45.1	45 8
Southern division	51.8	57.6
Northern divisicn	32.2	32 5
Northern division branches	15.4	13.0

No possible per diem or mileage saving is overlooked. For example, all agents have been notified by circular, supplemented by personal calls on as many of them as possible, of the importance of using C. G. W. refrige:ator cars wherever possible. They are not merely told to do this, but the reason for doing so has been explained to them. By the circulars and by personal conversation, the agents were shown that the use of foreign refrigerator equipment means an expenditure of 2 cents per mile as long as the car is on the railroad. It has also been pointed out that when C. G. W. "freezers" are used, not only is this charge saved, but if the destination is off the line, the C. G. W. actually earns 2 cents per mile on the car while it is off its rails. Knowing exactly why the order has been issued, the agents are glad to cooperate, and the result has been increased loading of C. G. W. "freezers."

The Chicago Great Western

During 1924, per diem payments for the use of foreign railroad-owned freight cars amount to $1,335,276. In 1925, this was reduced to $1,255,706 and in 1926 to $1,233,643, or a saving of $101,633 in two years.

To measure the car handling results on this line, account must be taken of the nature of the traffic and its origin. The latter is an important consideration, because local loading nearly always means the use of cars owned by the Great Western, while loads delivered from connections are usually in foreign cars. As stated above, the traffic requires the use of more cars than the railroad owns and the average number of cars on line each day is about 110 per cent of ownership. The saving in the hire of foreign cars was made despite traffic conditions which tended directly to promote the use of foreign cars. About 15,000 more loaded cars were received from connections in 1926 than in 1925 and 6,000 more loaded on the line. As a result of smaller loading on its own line it became increasingly difficult to load Chicago Great Western cars for away-from-home-movement, so that per diem might be earned to offset payments for the increased number of foreign cars. The mileage of foreign freight cars increased from 62,561,271 miles in 1924 and 64,595,473 miles in 1925 to 68,407,105 in 1926. Yet despite this, the per diem saving was made. The underlying reasons are that cars were handled more promptly and intelligently.

The "John B. Jervis" Develops a Maximum Tractive Force of 103,000 lb.

The D. & H. Receives a Second High Pressure Locomotive

The "John B. Jervis" is a 2-8-0 cross-compound with a water tube firebox—Boiler pressure, 400 lb.

A CROSS-COMPOUND Consolidation type locomotive, carrying a working boiler pressure of 400 lb., was delivered to the Delaware & Hudson by the American Locomotive Company on February 2, 1927. It has since been operating in freight service between Oneonta, N. Y., and Mechanicsville. This locomotive, which has been named the "John B. Jervis" in honor of the memory of the first chief engineer of the Delaware & Hudson Canal Company, is of essentially the same design as the "Horatio Allen," its predecessor by a little more than two years.

John E. Muhlfeld, consulting engineer for the railroad is responsible for the design of both locomotives. They both have water tube fireboxes of unique construction; both carry much higher boiler pressures than are common locomotive practice, and both have cross-compound cylinders. The boiler pressure of the new locomotive, however, is 50 lb. higher than the 350 lb. of the Horatio Allen, and several changes have been made in the proportions of the firebox. By the elimination of certain auxiliary devices and by refinements of the design in various details, the weight has also been considerably reduced. The appearance of the locomotive has been changed from that of the Horatio Allen by the remodeling of the jacketing.

A comparison of the principal dimensions and proportions of the two locomotives is given in the table. Aside from the points already alluded to, it will be seen that the cylinder diameters are smaller, so that, with the higher boiler pressure, they develop substantially the same tractive force.

The Boiler

The boiler has a water tube firebox and a fire tube barrel, the latter of relatively small diameter and completely filled with water. The steam space is in the steam drums of the firebox which are carried forward well beyond the firebox and connected to the barrel near their front ends.

It will be remembered that the heating surface in this firebox is not entirely of water tubes.* The back head and rear fire tube sheet connections are water leg headers, each built of parallel stayed sheets, through which pass the two 20-in. water drums at the bottom and the two 30-in. steam drums at the top. Ports through the drum shells in the header spaces, provide for circulation between the drums and headers. The front extensions of the steam drums pass through a saddle connection of parallel stayed sheets which is riveted to the boiler shell. Circulation between the barrel and steam drums, through the saddle, takes place through ports in the shells. The barrel shell is riveted into a flanged opening in the front wall of the front water leg and the rear fire tube sheet is riveted into a similar opening in the back wall of this water leg.

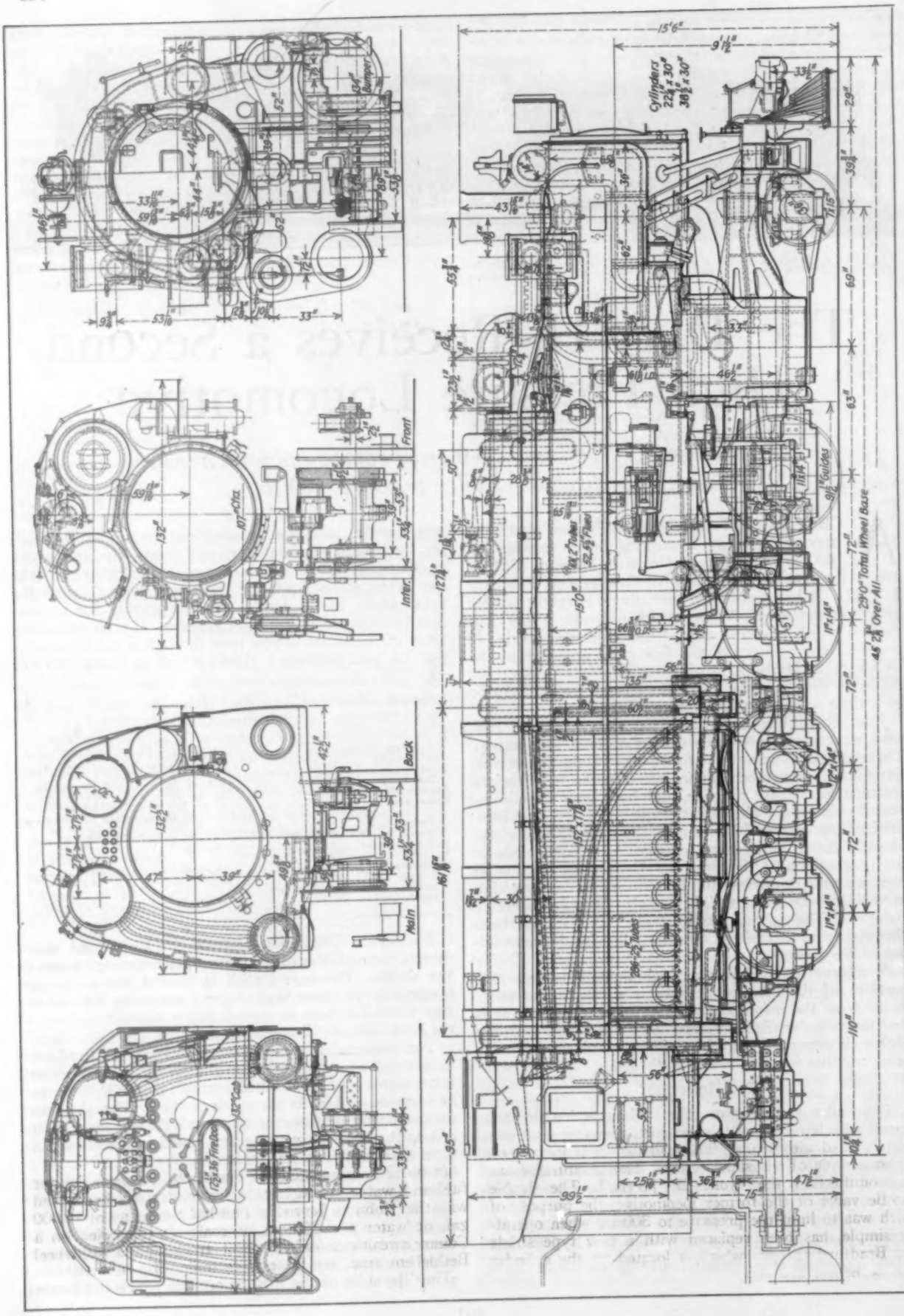
Principal Dimensions of the "John B. Jervis" and the "Horatio Allen"

	John B. Jervis	Horatio Allen
Weight on drivers	295,000 lb.	298,500 lb.
Total weight	336,500 lb.	348,000 lb.
Total evaporative heating surface	3,121 sq. ft.	3,200 sq. ft.
Superheating surface	700 sq. ft.	579 sq. ft.
Grate area	82 sq. ft.	71.4 sq. ft.
Cylinders	22½ in. and 38 in. by 30 in.	23½ in. and 41 in. by 30 in.
Diameter of driving wheels	57 in.	57 in.
Boiler pressure	400 lb.	350 lb.
Cylinder tractive force:		
Compound	70,800 lb.	70,300 lb.
Simple	85,000 lb.	84,300 lb.
Tractive force of auxiliary locomotive	18,000 lb.	18,000 lb.

The outstanding difference in the boiler of the "John B. Jervis," as compared with that of the Horatio Allen, is an increase of 15 in. in the length of the firebox, and an increase of 3 in. in the width of the firebox, the water drums having been spread that much farther apart. This effects the increase in grate area noted in the table.

In the Horatio Allen the heating surfaces of the sides of the firebox were made up of 306 tubes, about two thirds of which were 2 in. in diameter and the remainder 2½ in. in diameter. The ends of these tubes were arranged in six staggered rows where they entered the water and steam drums, the two outside rows on each side, however, really forming one solid row of tubes along the sides of the firebox, against which the lagging

*For a description of the "Horatio Allen," see the *Railway Age* for February 7, 1925, page 353.



Cross Sections and Elevation of the "John B. Jervis"

was applied. In the new locomotive there are only 286 tubes, all 2½ in. in diameter, arranged in five rows throughout their length. The sides of the firebox are closed with panels of Ascoloy steel sheets, the ability of which to withstand the high temperatures incidental to contact with the fire has been demonstrated by special tests. The lagging is applied outside of these sheets. Just above the water drums along each side of the firebox, a number of handhole openings are secured to the firebox wall sheets. These permit cleaning off from the tops of the drums and from the fire tubes of any accumulation of ash which may have been carried over from the grates, without knocking the fire.

While these changes have effected some slight variations in the heating surface distribution in the two locomotives, the only change of moment is the increase in the superheating surface from 579 sq. ft. to 700 sq. ft. Experience with the "Horatio Allen" and other tests have indicated that no difficulty need be anticipated from maximum steam temperatures considerably in excess of 600 deg. F., for which the superheater in the Horatio Allen was originally proportioned. The superheater in the "John B. Jervis" is proportioned to produce a maximum steam temperature of about 700 deg.

The interior firebox arrangement is essentially the same in both locomotives. The brick arch extends the entire length of the firebox and causes the gases to flow outward and up through the five longitudinal staggered rows of water tubes on each side, thence into the combustion space above the arch and to the fire tubes. As in the boiler of the "Horatio Allen," eight longitudinal water tubes are located between the firebox headers at the top of the combustion chamber. The auxiliary superheater, which was located in the firebox of the "Horatio Allen," has been omitted in the new locomotive.

In the "Horatio Allen" four pipe connections were carried up from the top of the boiler barrel and connected alternately to the two steam drums. Considering that with the steam collector arrangement used in the steam drums of both locomotives, steam is collected over a wide area of water surface, and that approximately 75 per cent of the steam is generated in the firebox, the saddle and header connections between the boiler shell and the steam drums are believed to provide all the communication necessary. These pipe connections have, therefore, been omitted in the boiler of the "John B. Jervis."

Steam Distribution

In the main superheater the spiral type of unit construction has been retained in the new locomotive. Each unit of this superheater consists of a single loop, the saturated end of which is formed in a spiral around the straight return pass. Attention has already been called to the increase in the number of units from 42 to 52.

The arrangement of the header is essentially the same as in the "Horatio Allen," but the use of a so-called front end throttle valve permits the superheated steam for the auxiliaries to be taken directly from the main superheater header, on which a flanged opening is cast for that purpose.

Several changes have been made in the steam pipe arrangement. In the "Horatio Allen" a centrifugal type desaturator was placed in the steam pipe on the boiler side of the throttle, which in turn was located on the boiler side of the superheater. The desaturator has been omitted in the "John B. Jervis." The double throttle valve of the former locomotive, the purpose of which was to limit the pressure to 300 lb. when operating simple, has been replaced with a new type single seat Bradford throttle which is located on the cylinder side of the superheater.

Aside from this, the principal change in the steam pipes is an increase in the diameter of the receiver pipe from 10 in. where it leaves the Mellin intercepting valve, to 14 in. where it passes over the smoke arch. The diameter of the receiver in the "Horatio Allen" was 10 in. throughout. Superheated steam for the auxiliary locomotive on the tender is taken from the high pressure cylinder branch pipe. The steam distribution is controlled by a Walschaert valve gear operating a 12-in piston valve in the high pressure valve chamber and a 14-in. double operated piston valve in the low pressure valve chamber.

The cylinders and frames are essentially of the same construction in the "John B. Jervis" as in the former locomotive. In both locomotives the main frames terminate just back of the cylinders, where they are bolted to a combined steel saddle casting and front deck plate. To this casting is bolted the high pressure cylinder on the right side and the low pressure cylinder on the left side. The smokebox saddle fit is a separate casting which is bolted to the top of the main saddle casting, thus permitting the removal of the boiler without disturbing the smokebox saddle fit or the main frame splice. In the "John B. Jervis," however, the combined steel saddle and deck casting has been redesigned and the weight reduced. A further material reduction in weight was also effected by the use of manganese cast steel for both the high and low pressure cylinders, which in the "Horatio Allen" were of cast iron. This reduction in cylinder weight is one of the principal factors in reducing the weight of the engine truck from 49,500 lb. in the case of the "Horatio Allen" to 41,500 lb. in the case of the new locomotive.

Other Changes

Particular attention was given to improving firebox draft and combustion with a view to reducing cylinder back pressure and fuel consumption. To assist toward this end, the new locomotive has been equipped with a trial application of the German State Railways' type of draft appliance. In this front end arrangement all baffle plates are removed from the smokebox, and the drafting appliances consist only of a low exhaust nozzle, the base of the tip of which is only about 15 in. above the bottom of the smoke arch, a cylindrical netting enclosure which extends from the nozzle to the base of the stack, and the stack itself. Beyond these appliances there is nothing in the smokebox except the front ends of the superheater units. The header itself, as in the case of the "Horatio Allen," is located outside of the smokebox shell.

No outstanding changes have been made in the running gear, although there has been a refinement of some of the details. One of the changes consists in the use of Edmonds oil lubricated driving boxes on the main pair of journals.

Special attention was given to the cab and boiler head arrangements, and a very comfortable and convenient cab is the result. Comfortable seats have been provided on both sides of the cab, that on the fireman's side providing room for the head brakeman as well as the fireman. Particular attention was given to the ventilation of the cab and clear vision front windows are provided on both the right and left sides.

In order to eliminate stopping heavy freight trains for fuel and water, a larger-capacity tender has been used with the "John B. Jervis." This has a capacity of 16,000 gal. of water and 20 tons of coal. It is carried on a Commonwealth six-wheel front truck and a six-wheel Bethlehem auxiliary locomotive under the rear end.

The "John B. Jervis" is reported to have gone into

service in a very satisfactory manner both with respect to the running of the machinery, the steaming capacity and the superheat. The steaming has been exceptionally free and it is reported that it has been necessary to keep the fire door open a considerable part of the time to prevent loss of steam through the pops. The new throttle has proved to operate very satisfactorily and to be entirely free from any leakage. In order that accurate data may be obtained with respect to the performance of the locomotive, dynamometer car tests will be made.

The principal dimensions, weights and proportions are shown in the following table.

Table of Dimesions, Weights and Proportions of the "John B. Jervis"

Railroad	Delaware & Hudson
Type of locomotive	2-8-0
Service	Freight
Cylinders, diameter and stroke	22¼ in. and 38½ in. by 30 in.
Valve gear, type	Walschaert
Valves, piston type, size	12 in and 14 in.
Weights in working order:	
On drivers	295,000 lb.
On front truck	41,500 lb.
Total engine	336,500 lb.
Tender	303,000 lb.
Wheel bases:	
Driving	18 ft.
Rigid	18 ft.
Total engine	29 ft.
Total engine and tender	74 ft. 11½ in.
Wheels, diameter outside tires:	
Driving	57 in.
Front truck	36 in.
Journals, diameter and length:	
Driving, main	12 in. by 14 in.
Driving, others	11 in. by 14 in.
Front truck	7 in. by 15 in.
Boiler:	
Type	Combined water and fire tube
Steam pressure	400 lb.
Fuel, kind	Mixed anthracite and bituminous
Diameter, first ring, inside	61⅞ in.
Firebox, length and width	152 in. by 77⅝ in.
Arch tubes, number and diameter	6-3½ in.
Fire tubes, number and diameter	101-2 in.
Fire flues, number and diameter	52-5½ in.
Length over tube sheets	15 ft.
Grate area	82 sq. ft.
Heating surfaces:	
Firebox	1,150 sq. ft.
Arch tubes	67 sq. ft.
Fire tubes	788 sq. ft.
Fire flues	1,116 sq. ft.
Total evaporative	3,121 sq. ft.
Superheating	700 sq. ft.
Comb. evaporative and superheating	3,821 sq. ft.
Tender:	
Water capacity	16,000 gal.
Fuel capacity	20 tons
General data estimated:	
Rated tractive force:	
Cylinder, simple	85,000 lb.
Cylinder, compound	70,800 lb.
Auxiliary locomotive	18,000 lb.
Weight proportions:	
Weight on drivers ÷ total weight engine, per cent	87.6
Weight on drivers ÷ tractive force, simple	3.5
Weight on drivers ÷ tractive force, compound	4.17
Total weight engine ÷ comb. heat.surface	88.2
Boiler proportions:	
Tractive force, comp. ÷ comb. heat, surface	18.5
Tractive force, comp. × dia. drivers ÷ comb. heat. surface	1,056.0
Firebox heat. surface ÷ grate area	14.0
Firebox heat. surface, per cent of evap. heat. surface	36.9
Superheat. surface, per cent of evap. heat. surface	22.4

Report of Director General of Railroads

WASHINGTON, D. C.

A. W. MELLON, as director general of railroads, has submitted to the President a report showing the progress made during 1926 by the Railroad Administration in completing the liquidation of controversies growing out of federal control. Although settlements had been effected with most of the railroads before 1926, many suits and controversies involving short lines and other parties remained. During the year 2,962 suits in which the director general was interested, involving $11,767,282, were disposed of, the director general paying out $1,929,517 and collecting $132,689. There was a total reduction of $534,783 in the administrative expenses and a reduction of 140 in the average number of employees of the Railroad Administration, and the report says it is expected that by January 1, 1928, a very small organization should be able to supervise the disposition of all remaining matters growing out of the federal control of railroads. The principal part of the report follows:

Trustee Accounts

On January 1, 1927, there was outstanding in trustee accounts the sum of $648,307. These accounts, with the exception of one pending in the Court of Claims, are being handled directly by the comptroller of the Railroad Administration with the various carriers.

Pending Litigation

Suits growing out of Minnesota forest fires.—On January 1, 1926 there were 875 suits pending, in which the amount claimed was $3,800,000. During the year 861 suits, in which the amount claimed was $3,735,000, were disposed of for the sum of $599,164, leaving 14 suits pending on January 1, 1927, in which the amount claimed was $65,000. These will be disposed of during the coming year.

Suits against the director general.—On January 1, 1926, there were pending 3,154 of such suits, exclusive of suits by short-line railroads. The amount claimed in these suits was $18,267,070. During the year, 1,191 suits, in which the amount claimed was $6,379,035, were disposed of for the sum of $678,340, leaving pending on January 1, 1927, 1,963 suits, in which the amount claimed was $11,888,055.

American Railway Express Company.—On January 1, 1926, there were pending against the American Railway Express Company, 1,551 suits growing out of Federal control, in which the amount claimed was $532,358. During the year 427 cases, in which the amount claimed was $171,925, were disposed of for $14,150, leaving 1,124 suits pending on January 1, 1927, in which the amount claimed was $360,433.

Suits by the director general.—In addition to the foregoing, on January 1, 1926, there were pending 1,038 suits brought by the director general for transportation charges amounting to $1,831,452. On January 1, 1927, these suits had been reduced by 290; the amount collected was $132,689; and there were left pending on January 1, 1927, 748 suits, in which the amount claimed was $1,551,849.

Short Lines.—In addition to the foregoing, there were pending on January 1, 1927, 43 suits involving the right of short-line railroads to compensation for the alleged control of their railroads during the first six months of 1918. The amount claimed was approximately $886,065. Some of these suits are pending before boards of referees; others are in the Court of Claims and two are on appeal to the Court of Appeals, District of Columbia. Six suits of this character, in which the amount claimed was $199,097, were disposed of during the year without any payment.

Reparation and overcharge claims.—The number of these claims pending before the Interstate Commerce Commision on January 1, 1926, was 338, in which the amount claimed was $2,578,154. On January 1, 1927, these claims, in which the amount claimed was $1,002,322, had been reduced by 187. The amount paid was $637,863, and there were left pending 151 claims, in which the amount claimed was $1,575,532.

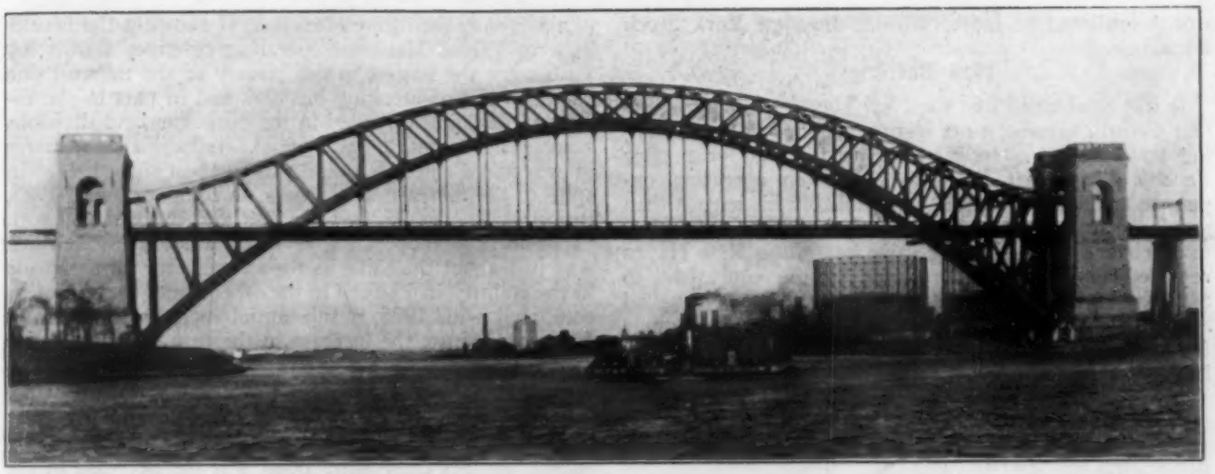
Other Matters

On January 1, 1926, there were under negotiation 3,393 claims of the director general in the division of law not in suit, amounting to $1,139,634. On January 1, 1927, these claims had been reduced to 1,028, in which the amount claimed was $759,273. During the year 2,365 claims, involving $380,360, were disposed of, and there was collected on these claims the sum of $174,559.

In addition, on January 1, 1927, there were 259 claims of the director general pending in bankruptcy and receivership proceedings, amounting to $360,366. On these claims little or nothing will be recovered.

Receipts for the calendar year 1925 were $59,105,205, as compared with $26,609,037 for the calendar year 1926, showing a decrease of $32,496,168 during the latter year. Disbursements in 1925 were $3,493,206 as compared with $2,714,592 in 1926, showing a decrease of $778,613 in 1926.

Administration pay rolls amounted to $712,116.49 in 1925, as compared with $333,203 in 1926, showing a decrease of $378,914 in 1926. The average number of employees in 1925 was 271, as compared with 131 in 1926, showing an average decrease of 140. On January 1, 1926, there were 182 employees and on January 1, 1927, the number of employees had been reduced to 100.



Hell Gate Bridge and Under it a New Haven Tug with Pair of Car-floats Passing Through Hell Gate

New Haven Dividend Possibility

Increased earnings and improved operating efficiency show in higher prices for stock and better attitude of public

IT is difficult to believe that it was only about three years ago that people were questioning whether the New Haven would succeed in avoiding a receivership. Today they are wondering how soon it will pay a dividend. As a matter of fact, New Haven was not in such grave danger of receivership three or four years ago, nor is it likely—considering that until very recently, if not at the present moment, the road had a corporate deficit instead of a corporate surplus—that the directors will believe it advisable to declare any dividends in the very near future. Nevertheless, such expectations are significant of the remarkable improvement in the fortunes of this property which has occurred in a very short time.

The fear of New Haven receivership was largely contemporaneous with the railway shopmen's strike of 1922 and the results reflected from it in 1923. The company reported deficits after fixed charges in 1920, 1921, 1922 and 1923. As a result, the price of the stock fell off to a range during 1923 from a low of 9⅝ to a high of only 22½ and the convertible debenture 6 per cent bonds, on which interest has been paid regularly, sold between 52 and 73¼. Now, on the other hand, the convertible debentures are selling at 108. The lowest price at which the company's stock has sold during the present year was 41⅝. This stock was one of that group of low priced railroad stocks that bounded upward in sympathy with Wheeling & Lake Erie but it proved to be one of the few that, having reached a high price, stayed there after the commotion in the stock market had subsided. Sales of New Haven stock totaled over 300,000 weekly the last week of January and the first week of February. In the week ended February 11, the total was over 600,000 or about two-fifths of the total outstanding and even in the week ended February 18 the total was over 400,000. The price went up to 58⅝ but it is still selling at around 53 and remains for the moment one of the more popular

Knickerbocker Limited at Roxbury, Mass.

stocks—railroad or industrial—on the New York Stock Exchange.

1926 Earnings

It will be recalled that the New Haven went into Federal Control earning a net income, but it came out earning large deficits. In fact, during the first year after Federal Control, it failed to earn even operating expenses, and in this respect was probably hit harder than any large road. Then after having reported deficits after fixed charges for four successive years, the New Haven reported in 1924 net corporate income equivalent to $1.91 a share on its capital stock. In 1925, net equalled $4.72 a share and the preliminary statement of earnings for 1926, recently published, shows $5.25 a share. Selected items from the 1926 income statement follow:

Table I—Condensed Income Statement

	1926	1925	Increase or decrease
Average miles operated	1,917.01	1,935.35	—18.34
Operating revenues			
Freight	$69,234,031	$67,667,235	$1,566,796
Passenger	50,401,785	49,735,504	666,281
Total	$135,065,836	$132,266,423	$2,799,413
Operating expenses			
Maintenance of way and structures	17,790,161	16,992,837	797,324
Maintenance of equipment	28,708,196	27,629,520	1,078,676
Traffic	967,733	906,114	61.619
Transportation	46,347,231	46,733,099	—385,868
Total	$99,540,261	$97,745,382	$1,794,879
Net revenue from railway operations	35,525,575	34,521,041	1,004,534
Railway tax accruals	5,381,207	4,890,151	491,056
Railway operating income	$30,131,518	$29,611,845	$519,673
Equipment rents—Dr.	2,344,087	1,755,493	588,594
Joint facility rent—Dr.	4,583,378	4,531,557	51,821
Net railway operating income	$23,204,053	$23,324,795	—$120,742
Non-operating income	6,756,799	6,987,098	—230,299
Gross income	29,960,852	30,311,893	—351,041
Deductions from gross income	21,717,740	22,893,641	—1,175,901
Net income	$8,243,112	$7,418,252	$824,860
Per cent on stock	$5.25	$4.72	$0.53
Operating ratio	73.7	73.9	—0.2
Trannsportation ratio	34.3	35.3	—1.0

There are a number of significant features in this statement as will be observed particularly if comparison is made with the figures in Table II showing the results back to 1916. The total operating revenues shown for 1926 were the largest in the history of the railroad due partly to record-breaking business and in part to the increased divisions awarded in the New England divisions case. The operating ratio of 73.7 reflects a progressive improvement since 1920 and was the best since 1917. In spite of the increase in business, as compared with 1925, transportation expenses were less and the ratio of such expenses to total operating revenues was only 34.3, which was just about the same as the average for all the roads in the country in 1926. On the other hand, there was, as compared with 1925, a substantial increase in expenses for maintenance, the increase in the case of maintenance of equipment being 3.8 per cent. This will be referred to again because this increase took place in spite of a substantial decrease during 1926 in the amount of equipment which the New Haven owns.

Still another interesting point was the decrease in the item of deductions from gross income. This is explained in part by a change in accounting. The New Haven, for example, guarantees the bonds of the New York, Westchester & Boston, all the stock of which it owns and which operates electric lines in the New York suburban zone. The Westchester does not earn this interest so the New Haven has to pay it, the amount totaling $864,000 annually. Hitherto this charge has been made to income account but, effective January 1, 1926, the charge was made to profit and loss instead, following a ruling of the Interstate Commerce Commission.

The Deficit Corporate "Surplus"

Among the New Haven's many peculiar problems its profit and loss account is of particular importance. About 15 years ago the New Haven tried to acquire control of the greater part of New England's transportation facilities—railroads, coastwise steamship lines, trolley lines, etc. At about the time the people of that region had become aroused to opposition to such com-

The New York, New Haven & Hartford

plete monopoly the road had built up a tremendous burden of fixed charges which the earnings from its varied outside operations by no means sustained. As of December 31, 1925, the company's balance sheet showed a profit and loss deficit of $41,000,000. There was, however, an item of $27,000,000 additions to property through income and surplus and a small item for sinking fund reserves leaving a deficit corporate surplus of $13,836,274. The question is as to whether this item will still appear in red ink in the 1927 balance sheet.

Several developments have taken place that may have put it in black. First is the 1926 net income of $8,243,112. Second is the prospective merger with the Central New England, which owns the line from New Haven, which the New Haven has held on its books at a book value of only $1,921,698 and in addition the Central New England has had a corporate surplus of about 2½ million. It would appear, therefore, as if the New Haven balance sheet may soon show a real corporate surplus, in which case the possibility of New Haven dividends is much greater than it might otherwise be.

Character of the System

The New Haven is an unusual railroad in a great many respects. It serves the country's most thickly populated area. It operates under a single management a net work of railroad lines comparable with the network of lines operated by the many railroads in the terminal

An Interesting Picture of Intensive Railroad Development—On the New Haven's Six-Track Electrified Section

across the Poughkeepsie bridge to Maybrook, N. Y., and Campbell Hall. The New Haven has for years owned all but a few shares of this important part of its system but a separate corporation has been maintained. The last remaining shares have lately been acquired and it is proposed to merge the Central New England and also the Harlem River & Portchester which owns the six-track electrically operated line between New Rochelle and the New York freight terminals on the Harlem river. The Central New England has outstanding $8,532,000 common and preferred stock areas surrounding New York, Chicago, St. Louis or Kansas City. It has an unusually large proportion of branch line mileage the industries on which require high grade service, thus presenting what is probably the country's most complicated problem of co-ordinating branch line and through freight train operation in order to render the desired expeditious delivery of raw and finished products. Strictly speaking the road is a combination of terminal areas, some idea of which is given by noting that the New Haven's new Northup avenue classification yard at Providence, R. I., serves seven

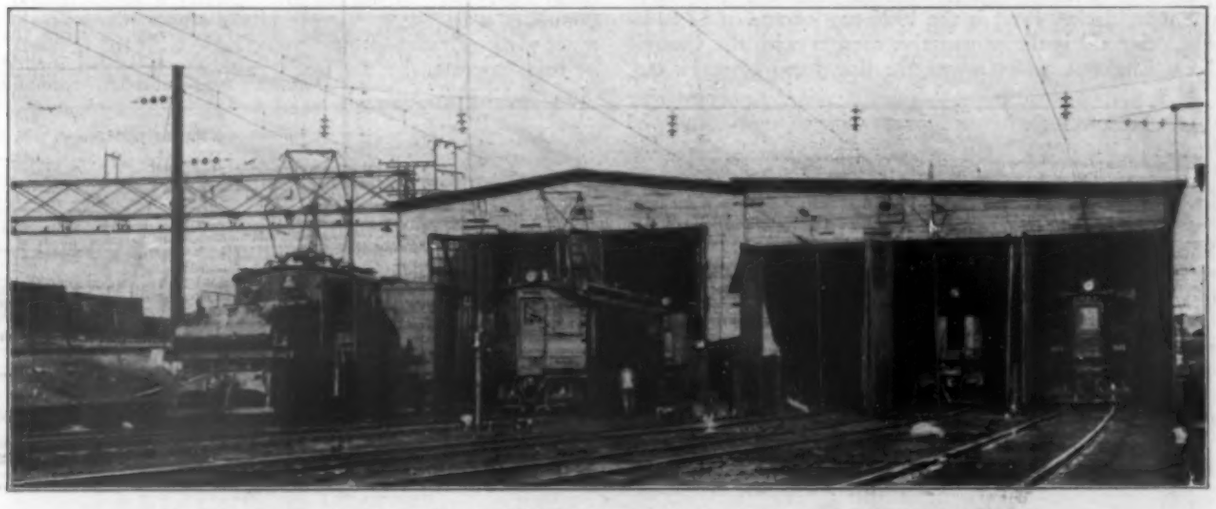
Table II—New York, New Haven & Hartford, Operating Results, Selected Items, 1916 to 1926

Year	Average Mileage	Revenue ton-miles	Revenue passenger-miles	Revenue per ton mile, cents	Total operating revenues	Total operating expenses	Net operating revenues	Operating ratio	Net railway operating income	Net after charges	Net charges for additions and betterments
1916.....	1,995	2,567,831,000	1,650,475,000	1.515	$80,432,167	$54,372,029	$26,060,138	67.60	.....	$5,554,977	$6,026,742
1917.....	1,995	2,776,144,000	1,814,461,000	1.460	85,784,893	61,970,060	23,814,833	72.24	.....	2,404,095	8,161,109
1918.....	1,992	2,938,402,000	1,831,116,000	1.729	102,294,212	87,846,253	14,447,959	85.78	7,350,350	885,692	17,007,592
1919.....	1,966	3,169,099,000	2,023,988,000	1.557	106,545,120	92,835,701	13,709,418	87.13	6,055,126	—877,060	4,197,559
1920.....	1,972	2,919,685,000	2,153,959,000	1.943	123,512,310	126,346,384	—2,834,073	102.29	—12,575,137	—4,621,\$07	11,699,316
1921.....	1,986	2,493,064,000	1,891,343,000	2.159	116,405,233	106,402,295	10,002,938	91.41	740,034	—14,121,623	3,608,572
1922.....	2,003	2,608,412,000	1,850,961,000	2.309	123,246,641	99,988,856	23,257,785	81.13	12,074,160	—4,865,768	2,287,126
1923.....	2,001	3,050,944,000	1,909,398,000	2.212	133,940,586	107,816,094	26,124,492	80.50	13,277,728	—2,917,106	4,725,991
1924.....	1,986	2,976,323,000	1,826,282,000	2.141	127,213,698	97,480,324	29,733,375	76.63	19,787,279	2,998,650	4,008,915
1925.....	1,935	3,119,103,000	1,806,456,000	2.180	132,266,422	97,745,382	34,521,040	73.90	23,324,793	7,418,252	*1,874,915
1926.....	1,917	.....	.....	.....	135,065,836	99,540,261	35,525,575	73.70	23,204,053	8,243,112	.....

* 1925 expenditures totaled $8,805,921, from which were deducted retirements totaling $6,931,006, including $3,440,756 for retirements of freight and passenger train cars.

radiating lines, while the new car retarder yard at Hartford, Conn., serves eight.

The road has little opportunity for long freight train runs. Although, with the Central New England, the New Haven operates about 2,200 miles of road, from one end of its territory to the other is less than 300 miles. And then as if these were not complications enough to railroad operation the road handles a passenger traffic excelled in volume, as indicated in passenger revenues by only three railroads—the Pennsylvania, the New York Central and the Southern Pacific. The New Haven's large proportion of passenger business is shown by the fact that in 1926 the total freight operating revenues were only 51 per cent of the total operating revenues.



Electric Locomotive Inspection Building at Stamford, Conn. Main Line at Extreme Left

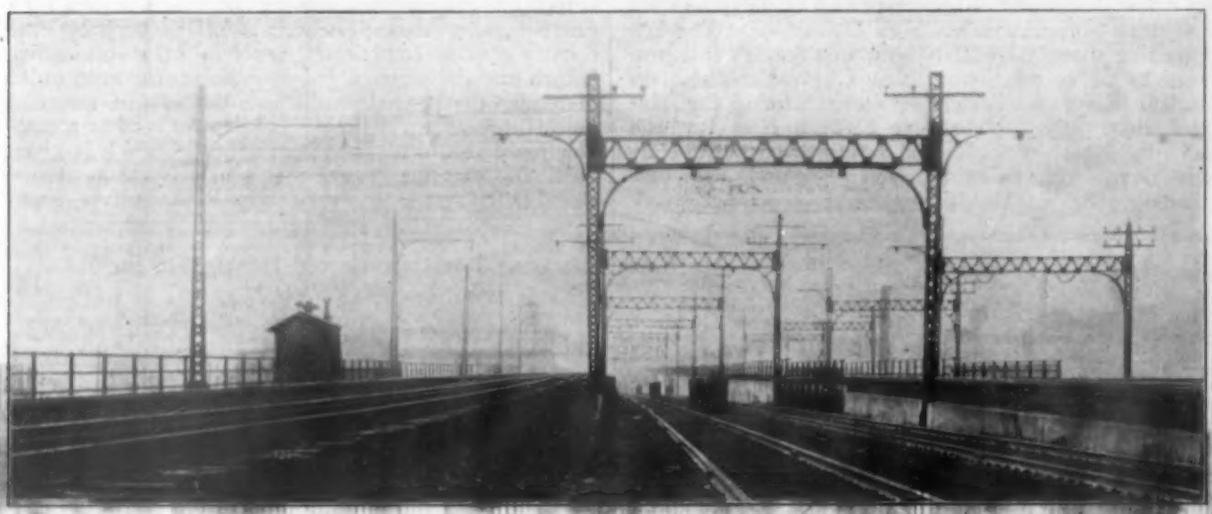
A Large System

The New Haven ranks 27th among the railroads of the United States from the standpoint of mileage. There are, however, only 11 roads that exceed it in operating revenues, and of these only three are in the east, namely the Pennsylvania, New York Central and Baltimore & Ohio. Those who look upon the New Haven as a merger possibility likely to be absorbed by some larger system might do well, in view of this fact, to consider how few such larger system there are. In New England, the general opinion is that if there must be mergers, the New Haven should be the absorbing and not the absorbed company.

It will, of course, be kept in mind with respect to consolidation that the New Haven owns a 51 per cent interest in the New York, Ontario & Western, owns practically all of the stock of the New York, Westchester & Boston and all of the stock of the New England Steamship Company, and the Connecticut Company which latter operates nearly all of the trolley lines and a large proportion of the motor bus lines in Connecticut, and that it still owns 26½ per cent of the stock of the now prosperous Boston & Maine.

It is further of interest that the New Haven's passenger business which, as above noted, ranks fourth in revenue among the railroads of this country, is sufficiently large so that in 1925 about one out of every 13 riders in the United States traveled on the New Haven and that one out of every nine commuters used its trains. There are only two roads in the United States that own more passenger cars than the New Haven.

(This is the first of two articles on the New Haven. The second will appear in next week's issue.)



The Approaches to Hell Gate Bridge

Principles of Rate Regulation*

By Dr. Arthur T. Hadley
President-Emeritus of Yale University

EVERYBODY agrees that rates should be reasonable. But what is a reasonable rate and how shall we go to work to secure it? You have to look at the question from two ends. What constitutes an unfair burden or an unfair disability? What is it that makes a rate or a price of any kind, fair or unfair? To answer these questions we must have a theory of value to start from. Until we have formed such a theory and are prepared to defend it on grounds of public policy, any scheme of rate regulation will be a mere makeshift. For more than two thousand years there has been a conflict between traders and philosophers as to the basis of value. With the advent of modern factories and modern transportation systems, business units grew so large that free competition in the old sense of the word became impossible. A favorite idea for controlling freight rates in the early part of the 19th century was the system of charter maxima. This was extensively tried in England. The early English railroad charters contain page upon page of maximum rates which the new companies might charge for transportation of goods of different kinds; but in a successful industry involving large capital, you cannot fix the cost of any unit of service in advance, because you cannot know the volume of traffic in advance.

When charter maxima proved of no avail, governments tried to secure reasonable rates by limiting profits; this proved even worse than the charter maxima. The principle of limitation of dividend is in itself faulty. So long as the charge is not too high the public have no interest in the reduction of dividend. Their interest is in the reduction of price, which is a totally different thing. The country that limits rates to "a fair return on prudently invested capital" discourages just the sort of industrial enterprise which is the most effective means of lowering public service charges and keeping the nation in the forefront of progress.

On the whole, there has been very strong evidence that you get lower charges and lower rates by leaving the initiative in rate-making to private companies which are trying to get whatever profit they can, than by limiting them to a rate of return fixed in advance or by taking the initiative out of their hands.

The prnciples propounded by Charles Francis Adams (1870-1880) justified themselves in practice. Adams held that the interest of the public—low rates—and of the rail owners—profit—could be made practically synonymous by far-sighted administration.

The interstate commerce act, passed in 1887, was largely based on Adams's principles, and the first report of the Interstate Commerce Commission indicated an intention to apply those principles with the same broad-minded fairness which he had used. The period from 1880 to 1900, during which they were generally accepted, was marked by reductions in rates, increase in service, and gradual removal of many abuses both in rate-making and in finance.

But as time went on, the character and purpose of the Interstate Commerce Commission—and of other commissions also—gradually altered. Their members became hearers of complaints rather than leaders of public opinion. Their time was so occupied by the adjudication of cases that they had little chance to look at larger questions. The initiative in rate-making was taken out of the traffic managers' hands. Experiments were prevented instead of being encouraged. The result was trouble for everybody, shippers and owners alike. Railroad profits went down, railroad development was retarded, railroad service curtailed. * * *

Things are a good deal better to-day than they were in 1917; but the railroad situation as a whole is far from being a sound or satisfactory one. Many railroad systems are now showing a good net income, and a few are showing a large one. But the average return on capital invested in railroads is not nearly so great as most people assume, and the danger from adverse legislation is very much greater.

The public aspects of the present situation are not so bad in other lines of industry as they are in railroads. Misunderstandings and antagonisms have not been allowed to develop so far. The leading electric men in the United States have known how to avoid some of the difficulties into which railroads have fallen. They have grasped the principle that the interests of a public service corporation are closely identified with those of the public which it serves, and they have done a great deal to make the people grasp it. They have taken the authorities into their confidence. They have consulted them in advance as to matters of financial policy. They have not been content with avoiding illegal actions; they have tried to avoid grounds of suspicion. The consequence is that public service commissioners have generally been friendly to the electric industry; and as a secondary consequence, we have had more rapid and more varied development of electric service in this country than anywhere else, and obtained our current at comparatively cheap rates.

Yet even in the electric industries, matters are not wholly satisfactory. A large part of the voters still think that the way to get low rates is to limit the profit of successful enterprises. Politicians find it easier to concur in a widespread popular error than to decide for themselves what will prove best in the long run. It takes a good deal of firmness and a good deal of economic and historical knowledge on the part of a commission or a court to protect the interest of the future against the loud-voiced demands of the present. In order that the control of rates may be effective and not disastrous we need more light all around. At present we do not see deep enough into things to have economic principles to fall back upon. Unless we get such principles, we are likely in the near future to repeat on a broader scale our disastrous experiences with railroad control from 1910 to 1920.

What are some of these principles, proved by experience and ignored by governments at their peril?

1. The question of rate regulation must be considered from both ends—producers' and consumers'. It is quite as important for all parties to secure a supply equal to the demand at any given price or rate, as it is to have the rate fixed as low as possible.

2. If the price of an article or service is high it indicates scarcity. To lower the price effectively we must remove the scarcity. This requires capital. To get the

*From an article, dealing mainly with freight rates and government regulation, in Yale Review for April.

capital we must allow a profit commensurate with the risk involved.

3. Permanent reduction of price is even surer to follow where we have large units of invested capital, commonly called monopolies, than where we have small units, commonly called competitors; for the large operating unit *must* make large sales in order to cover its overhead, and can profitably reduce rates for this end.

4. This is particularly true in progressive industries which use new inventions and methods involving much capital and large risks. Such industries depend for their success upon rendering increased service at lower unit costs.

5. To try to reduce rates in such industries to the level of costs, permitting only normal profit without allowance for risk, prevents the introduction of modern improvements which reduce cost, and thereby defeats its own end.

6. The use of cost of plant, and especially original or historical cost, as a *rate base* is wrong in principle and often dangerous in practice. The true basis for judging whether rates are reasonable in comparison with those of other companies working under similar conditions; with especial reference to the question whether they have promoted or hindered the development of traffic. If a rate is low in comparison with what prevails elsewhere and has developed traffic to an unusual degree, the profit from the traffic has been well earned.

7. (Perhaps most important and oftenest ignored.) Public service commissions should be given opportunity and encouragement to study the history of past attempts at regulation and the economic principles which have determined their success or failure. They should not be so overwhelmed with specific cases and complaints as to have no time for dealing with general questions of economic policy; they should be regarded, and should regard themselves, as expert advisers of the courts, the legislatures, and the public, on matters of vital importance to the country's future.

I. C. C. Investigating Car-Hire Settlement Rules

WASHINGTON, D. C.

A HEARING in connection with the Interstate Commerce Commission's investigation of the rules for car-hire settlement, involving also proceedings on several complaints filed by short line railroads, was begun before W. P. Bartel, director of the commission's Bureau of Service on March 8. The investigation was ordered by The commission last year following a petition filed by the American Short Line Railroad Association taking the position that the present per diem rules are inequitable in their effect on many short lines.

The position of The American Short Line Railroad Association was expressed in an opening statement by Moultrie Hitt in part as follows:

First: We grant at the outset, that the car owner as a car owner is entitled to be fairly compensated by the car user.

In principle it is our position that the car owner should, in one way, or another, get just compensation for the use of his car by others but that is a distinct question from that of what proportions of compensation to the car owner should be contributed by the respective car users in joint service.

Second: It is important always to bear in mind that while the per diem system is (1) a system of settlement between *car owners* on the one hand and *car users* on the other, it is also a system for the division between two or more *car users* of the cost of the vehicle used in traffic which is joint between such users.

A time system of calculating and making settlement may be substantially fair as between *car owners as a class* on the one hand and *car users as a class* on the other hand, but be substantially unfair and unjust as a means of apportioning the cost between *car users.*

It is obvious that this is so when it is remembered that far more time will elapse on a car while it is in the possession of a belt line, for example, for loading or unloading, with two days free time to the shipper, than will elapse on the car while it is in the possession of a road with a long line haul, and that the belt line will get just a small switching charge while the road with the long line haul will get a far larger earning. Nobody disputes that such is *the fact* with regard to switching traffic, and Per Diem Rule 5 so recognizes it because it is the means by which the line haul road reimburses the switching road for the amount the switching road has paid to the car owner.

As between a short line rendering the terminal service at a small revenue and the carrier with a long line haul which gets the bulk of the revenue the situation is precisely the same in principle.

The per diem system is complicated by the fact that car owners are also car users, and that car users are not always car owners, and that the proportions of car ownership to car usage varies widely and is different on every carrier, but we want to emphasize that the essential and paramount question now before the commission for consideration is that of the fair and reasonable *apportionment between the users of cars* of the cost of car ownership whether or not any or all of those car users are also car owners.

The ramifications of the per diem system and its dual nature are confusing to clear thinking and the greatest difficulty that confronts us all in this inquiry will be to avoid losing sight of the main proposition—that of finding a method of arriving at a fair apportionment between car users as car users of the cost of ownership of the cars.

Third: We freely grant that as a general rule the short line as a car user should pay the equivalent of interest, depreciation, insurance, taxes and other car ownership costs that it would have to pay if it owned its just share of the cars used in interline traffic. We ask no concession or favor at the expense of the car owners in their capacity as owners of the cars. The question is what proportion should be borne by one car user as compared with another car user where both participate in the joint traffic.

We, therefore, take our stand on the broad proposition that the true question for determination is to fairly approximate the proportion which should justly be contributed by the respective short and long lines as *car users* of the cars *used* in that interline traffic in which the short lines participate. The cost of car hire on interline traffic to be borne by short lines as car users should, generally speaking, be its justly proportionate part of the equivalent of the cost of car ownership and to find what proportion is just is the main issue in this case.

With that general statement I will now state the relief which is advocated by The American Short Line Railroad Association.

First: That the distinction in the per diem system as between (1) settlements with car owners and (2) settlements between car users be discerned and declared as between (1) car hire as a matter of settlements with car owners as car owners, and (2) car hire as a matter of apportioning the cost of car hire or car ownership between car users as car users.

Second: That the present discrimination against non-subscriber *car owners* in respect to the method and amount of compensation from *car users* be abolished. Whatever the basis of proper compensation to the car owner, the non-subscriber car owner is entitled to it just as fully as the subscriber car owner. This distinction will vanish if the commission prescribes the rules. We insist upon the same result whoever prescribes the rules.

Third: That the discrimination in the rules as between subscribers and non-subscriber car users merely because a line is a non-subscriber with respect to the Switching Reclaim, be abolished. If the per diem and car service rules be hereafter prescribed by the Interstate Commerce Commission, the arbitrary distinction between subscribers and non-subscriber *car users* will be automatically wiped out. We do not insist, however, that the commission do this if the same result can be brought about by the carriers themselves.

Fourth: That the short lines be given representation on the committees which make the per diem and car service rules and their interpretations.

Fifth: That the per diem rules provide that there may be special reclaim by short lines analogous to the existing rule 5 for switching reclaim, and that, within appropriate limits, the proper amount of such special reclaim be left to local adjustment by the car users directly interested; and that in the event of an inability to agree on the proper measure of such special reclaim, if any, in any instance, the disagreement be referred to arbitra-

tion, with or without the participation and good offices of a representative of the Interstate Commerce Commission.

Sixth: That where the cost and burden to the little short line, especially the stub-end feeders with only one connection, for accounting direct to several hundred car owners all over the United States and in Canada and Mexico is disproportionate to its light traffic, settlements may be made between the short line and its immediate connection acting for scattered car owners.

In other words, all we are asking for the short lines is fair treatment.

Lease of Lehigh & New England is Disapproved

WASHINGTON, D. C.

THE application of the Reading Company for authority to acquire control of the Lehigh & New England by lease for 999 years was denied by a unanimous decision of the Interstate Commerce Commission made public on March 9. The commission said that where doubt exists regarding the wisdom of a proposed grouping of carriers it must be resolved against the application and that such doubt exists in this case. Control of the Lehigh & New England by the New Haven, the report says, would have many advantages as compared with acquisition by one of the rival trunk lines, but the position was taken that its final disposition may well be postponed until the commission has fuller and better information in regard to larger plans that may be proposed for the consolidation of the eastern railroads. The commission also failed to approve the terms of the proposed lease, referring to the total annual payments of $1,639,815 by the Reading under the lease as a "high price for control."

Excerpts from the report are as follows:

Over 60 per cent of the tonnage originated on the New England consists of anthracite coal, the greater portion of which is shipped by the Lehigh Coal & Navigation Company. In 1925, the New England delivered to the Central of New Jersey 13,160 and to the Reading 6,455 carloads of anthracite coal, constituting together about 50 per cent of the total deliveries of anthracite coal by the New England to connecting lines in that year. Only 2,332 carloads were delivered to the Lackawanna, the Lehigh Valley, and the Pennsylvania together. Since 1871, there has been an agreement between the Central of New Jersey and the Lehigh Coal & Navigation Company respecting the routing of coal over the line of the Central of New Jersey, and certain modifications of that agreement have been long pending. The original agreement is described and discussed in *United States* v. *Reading Company*, 253 U. S. 26. The coal company leased to the Central of New Jersey a short line of railroad known as the Lehigh & Susquehanna, and one of the covenants of the lease required the coal company to route three-fourths of its coal over the leased line. This covenant was held lawful. The modifications were agreed to and became effective July 1, 1926. Their nature is not clearly shown, but it is not claimed that they will increase the proportion of the coal company's traffic routed over the Central of New Jersey. It is suggested by the Pennsylvania that the practical coincidence of the present tonnage agreement and the proposed lease of the New England indicates that the former is part consideration for the latter, bearing in mind the control of the Central of New Jersey by the Reading; and that in any event such agreements between shippers and carriers respecting tonnage are contrary to public policy. The general counsel of the coal company, who is also vice-president and general counsel of the New England, testified that there was no relation between the contract and the lease. On June 4, 1926, an agreement was entered into between the New England and the Central of New Jersey providing for the maintenance of such through routes as would permit the carrying out of the tonnage agreement, and the proposed lease under consideration provides that the lessee shall carry out all contracts of the New England, including the contract with the Central of New Jersey. A proposed contract between the Reading and Central of New Jersey pursuant to that provision of the lease is now held in escrow pending approval of the lease. It is explained by the Reading that the purpose of the proposed agreement is to protect the minority stockholders of the Central of New Jersey from any adverse action by the Reading respecting the routing of the coal company's traffic.

The coal produced on the lines of the New England competes in New York City and other common markets with the coal produced on the lines of the Reading, the Central of New Jersey, and other carriers serving the anthracite fields. Applying a general principle, the transfer of control of the New England from the Lehigh Coal & Navigation Company to the Reading would reduce competition in the transportation of coal produced on those lines. Applying another general principle, the relinquishment of control of the railway line by the coal company is in the public interest. The evils inherent in the common control of tonnage and transportation facilities have been particularly apparent in the mining and transportation of anthracite coal. In *United States* v. *Reading Company, supra*, the relations between the Reading and the Central of New Jersey and their controlled coal companies were condemned as inimical to the public interest and as illegal under the anti-trust laws. The transportation by these carriers of the coal produced by their coal companies was also found to be in violation of the commodities clause (paragraph (8), section 1) of the act. The relations between the carriers and the coal companies were ordered dissolved. Combining these principles, and excluding other considerations, we might conclude that, while the relinquishment of control of the New England by the Lehigh Coal & Navigation Company is in the public interest, the control should be transferred to some carrier serving no other anthracite territory.

This was, in fact, what was recommended by Professor Ripley in his report to us which was published in *Consolidation of Railroads*, 63 I. C. C. 455.

The sharp rivalry between great systems for the control of the line of the Lehigh & New England emphasizes the evidence as to the importance of the line in the transportation facilities of the East. Correspondingly, its assignment requires careful and deliberate consideration, and more than usual regard for the possible effects upon the traffic moving over the routes of which it forms, or may form, a part. There is here no exigency demanding hasty action. The application, although for a lease, contemplates permanent control. As previously stated, through co-operation between the Reading and the Lehigh Coal & Navigation Company, control could be exercised over the Lehigh & Hudson as well as the New England. Were the special advantages of the proposed lease more certain, we might perhaps be justified in relying upon our powers under the law to preserve the unrestricted use of these essential bridge lines by the Pennsylvania and other carriers, but mere ability to police a route is not a fair equivalent of the compulsion of self-interest. As we remarked in *Control of Virginian Railway*, 117 I. C. C. at page 85, if serious doubt exists regarding the wisdom of a proposed grouping of carriers, that doubt must be resolved against the application. Such doubt exists in this case.

While apparently there is no present disposition on the part of the New Haven to seek control of the Lehigh & New England, such control, as Professor Ripley pointed out, would have many advantages as compared with acquisition by one of the rival trunk line systems, and the fact that there seems no immediate prospect of the consummation of such control ought not to govern our action here, if we believe union with a New England system to be the best ultimate destination for this strategic line. The Lehigh & New England, it must be remembered, is not a financially weak carrier needing, on account of such weakness, control by a stronger carrier. Moreover, even if it be assumed that the Lehigh & New England should be acquired by some trunk line system rather than by a New England system, its final disposition is a matter that can well be postponed, in view of its strategic importance, until we have before us fuller and better information in regard to the larger plans that may be proposed for the consolidation of the eastern railroads.

We are also unable to find that the proposed obligations to be assumed by the Reading are "just and reasonable in the premises." The estimated effect of the lease upon the income of the Reading may be computed as follows:

Annual rental	$1,069,000
Annual payment to cover corporate expenses of the New England	7,500
Income tax on rental (present rate)	144,315
Property tax, (based on 1925)	75,000
Interest on funded debt (based on 1925)	344,000
Total payments	$1,639,815
Net revenue from operation of the Lehigh & New England property (estimated on basis of years 1923, 1924 and 1925, with consideration of recent tendency)	1,500,000
	$139,815
Less net reduction in income tax of Reading by reason of excess in payments	18,875
Net annual loss (without considering savings)	$120,940

Although, by reason of economies in capital and operating costs, and by reason of traffic accessions resulting from unification, the Reading might, and probably would, be able to increase its net income, we do not regard the payment of such a high price for control of the Lehigh & New England as in the public interest. It is proposed to surrender to the owners of the leased property a large proportion of the financial benefit which the consolidation

plan contemplates should accrue to the carriers for the benefit of the public through reduced rates and improved service. The adoption of similar standards in future transactions of the kind would impose upon the carriers too heavy a burden of fixed charges.

For the reasons stated, we are unable to approve and authorize the acquisition of control here sought. An order will be entered denying the application.

Railway Legislation in Sixty-Ninth Congress

WASHINGTON, D. C.

TWO railroad bills were passed by Congress amid the confusion that attended the closing hours of the session which adjourned on March 4, by a combination of S. 3286, introduced by Senator Mayfield, of Texas, to authorize carriers to reduce freight rates in cases of emergency, and H.R. 12065, introduced in the House by Representatives Newton of Minnesota, which includes several amendments to the interstate commerce act proposed by the National Industrial Traffic League and the Interstate Commerce Commission. The Newton bill was passed by adding it to the Senate bill as an amendment.

The activity in respect of railway legislation throughout both session of the Sixty-Ninth Congress was confined mainly to committee hearings, which resulted in several bills being reported but very little legislation. The chief achievements of the long session were the passage of the Watson-Parker railway labor act and the defeat of the Gooding long-and-short-haul bill, as well as some progress in the consideration of consolidation legislation.

The only railway bills passed at the short session were the Mayfield and Newton bills, which were passed and signed by the President on the last day, and the bill to authorize carriers to transport a blind person and accompanying guide for a single fare.

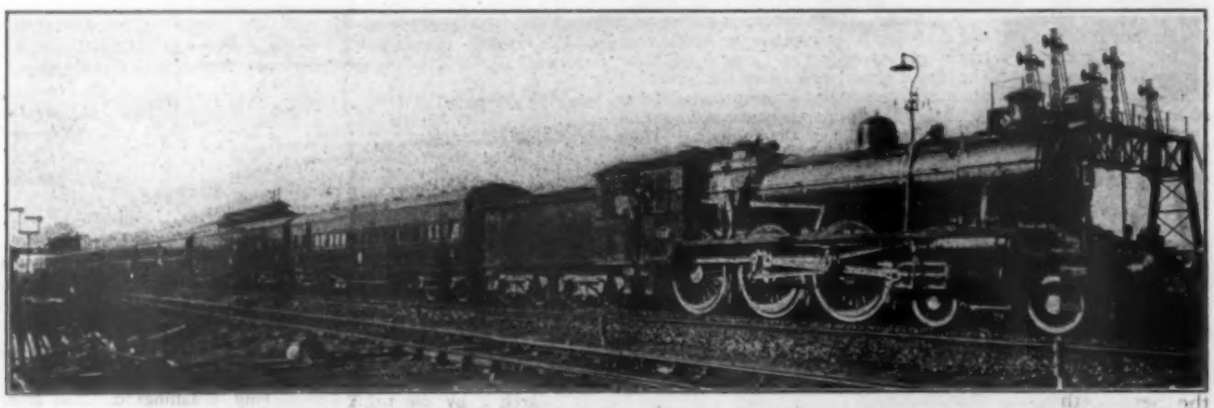
A joint resolution was passed directing the Secretary of the Interior to withhold his approval of the adjustment of the Northern Pacific land grants, which have been under investigation by a special joint committee of Senators and Representatives, until June 1, 1928. The resolution also directs the Attorney General to advise the joint committee as to what legal or legislative action should, in his judgment, be taken in the matter of the adjustment of the land grants. The committee, which is understood to have nearly completed its investigation, was also authorized to continue until the termination of the Seventieth Congress, but the appropriation for its expenses was contained in the second deficiency appropriation bill, which failed of passage because of the jam created by a filibuster in the Senate during the last few days of the session.

Bills Which Failed to Pass

Among the bills which failed of passage, although reported from committee, were the Pullman surcharge bill, which has been before Congress for several years, the Gooding bill to provide for a refunding of railway indebtedness to the government at a reduced rate of interest, the Pittman bill to exempt short lines from recapture, and the bill to provide for regional appointments to the Interstate Commerce Commission.

The Senate had passed a bill proposed by Senator Mayfield to omit the requirement of an Interstate Commerce Commission certificate for the construction of an extension within a state. When the House failed to act on it Senator Mayfield offered it as a Senate amendment to a bridge bill which had passed the House, but someone in the House discovered it and had it referred back to the committee on interstate and foreign commerce, where it remained.

Representative Newton's "omnibus" bill, which had been the result of several hearings before the committee on interstate and foreign commerce at the last session, and which was passed by the House on July 2, 1926, just at the close of the last session, had been reported out by the Senate committee without a hearing but the Senate had failed to take it up, so Mr. Newton had it added to the other Senate bill introduced by Senator Mayfield, which had passed the Senate but had not been considered in the House, and passed again in that form in the House on March 3. It was then passed in the Senate just before adjournment along with a number of other House bills laid before the Senate by the Vice-President, on a motion by Senator Mayfield that the Senate concur in the House amendments. "Without objection," it was "so ordered," although it is doubtful if many senators either knew what was in the bill or that it was being passed.



The "Imperial Indian Mail," a New Train Between Calcutta and Bombay

Operated by the East Indian and Great Indian Peninsular; meets the British ships at Bombay Mole. Consists of one mail car, two sleeping cars, one dining-parlor car, one baggage-kitchen-trainmen's car, one sleeping-baggage-trainmen's car. Interiors of polished teakwood. Sleeping cars all one or two berth compartments. Each car has bath and many fans. Accommodations on train for one servant per passenger.

The Mayfield bill adds to section 22 of the act a sentence that nothing in the act shall prevent a carrier from giving reduced rates for the transportation of property to or from any section of the country with the object of providing relief in case of earthquake, flood, fire, famine, drought, epidemic, pestilence or other calamitous visitation or disaster, if such reduced rates have first been authorized by order of the Commission (with or without a hearing).

The Newton Bill

The Newton bill deals with various details relating to the handling of claims, liability of carriers, etc. It also increases the period during which the Interstate Commerce Commission may suspend a rate, fare, charge, classification, regulation or practice to seven months. If the commission has not concluded its investigation proceeding by that time the rate goes into effect but in the case of an increase the commission may by order require the interested carrier or carriers to keep accurate account of the amounts received by reason of the increase so that the commission may later order a refund of such portion of such increased rate as by its decision shall be found not justified.

Another provision of the bill imposes a limit of 60 days from its passage for the filing of claims of short lines for reimbursement of deficits for the federal control period under section 204.

The Consolidation Problem

Extensive hearings on bills to amend the consolidation provisions of the present law were held by both the Senate and House committees and during the long session the Senate committee authorized the late Senator Cummins to report out his bill. During the short session additional hearings were held on a bill introduced by Senator Fess, which was similar to the bill introduced in the House by Representative Parker, but little interest was shown by members of the committee and no effort was made to consider the bill after the hearings were closed. The House committee, however, has done some serious work in executive session on the Parker bill and for a time hoped to report out a bill before the session closed. This was found impossible and on March 3 Chairman Parker of the committee introduced H.R. 17403, including the revisions agreed on as the result of the committee's deliberations on the first 10 sections of the bill.

In a statement on the bill Mr. Parker said that "although practically all the controversial questions involved have been thoroughly discussed by the committee, it seemed the better policy at the present time to reintroduce a bill embodying the policies tentatively agreed to by the committee in order that the provisions of the new bill may be available for analysis and study by the public prior to the meeting of the next Congress and that the resulting suggestions and criticisms may be available next December. "I have every reason to believe," he said, "that, with a vast portion of the necessary work already accomplished, the committee will be in a position to complete their consideration next Congress within a reasonably short period of time, and that legislation embodying substantially the principal policies of the bill introduced today, authorizing voluntary consolidations, subject to the approval of the Interstate Commerce Commission, will be forthcoming during the first session of the Seventieth Congress."

Mr. Parker also put in the Congressional Record an extensive statement of the arguments for a consolidation policy and an analysis of the bill.

Looking Backward

Fifty Years Ago

Considerable flutter was occasioned during the week by the announcement that Jay Gould had acquired a new influence in the directorates of the Chicago & Northwestern and the Chicago, Rock Island & Pacific. The vacancies on the boards of both companies were filled by the election of Jay Gould, Sydney Dillon and Oliver Ames. This action indicates a closer union between these roads and is considered as foreshadowing hostility to the Chicago, Burlington & Quincy. The New York Tribune says the movement seems much more likely to turn out a measure of telegraphic than of railroad importance.—*Chicago Railway Review*, March 10, 1877.

The Fitchburg Railroad has adopted a self-igniting fuse for signaling trains in the night. It is placed on the track, ignited by a cap, and burns about ten minutes, thus giving notice, where one train is following another, if the rear one is getting too near.—*Chicago Railway Review*, March 10, 1877.

The annual report of the president of the Pennsylvania shows that the Centennial exposition at Philadelphia nearly doubled the passenger mileage for 1876 and saved the railroad from an unfortunate year. If the passenger earnings had not been swelled, by an increase in the passenger mileage from 344,234,876 in 1875 to 623,208,761 in 1876, instead of a surplus of $1,500,000 after paying 8 per cent dividends, there would have been a deficit nearly equal to one quarter's dividend.—*Railroad Gazette*, March 9, 1877.

Twenty-Five Years Ago

The principal news of the week in the traffic situation was the agreement to dissolve the Trunk Line Association, the withdrawal of the Chicago, Rock Island and Pacific and the Atchison, Topeka & Santa Fe from the Southwestern Passenger Bureau; the withdrawal of the Rock Island from the east and west bound military agreement and the demand of the Interstate Commerce Commission that the rates on dressed beef and live hogs between the Missouri river and Chicago be equalized.—*Railway Age*, March 14, 1902.

Bids have been received by the Southern Pacific Company for grading part of the line on the location of the new cut-off, from Ogden, Utah, to Lucin, which crosses the Great Salt Lake by a long trestle. The cut-off will be 102½ miles long, effecting a saving in distance of 43 miles over the present route which skirts the northern end of the lake.—*Railway and Engineering Review*, March 15, 1902.

Ten Years Ago

The New York Central, which recently offered $25,000,000 stock to its stockholders at par, at a time when the stock was selling above par, has had to abandon the sale and to return to subscribers their first payments. Some stock was subscribed for but the price on the New York Stock Exchange declined to below par. One of the most important contributing causes is the reluctance of bankers to allow their clients to go into any new venture, with the present uncertainty as to whether the United States will enter the war.—*Railway Age Gazette*, March 9, 1917.

Approximately 90,000 people were brought into Washington on March 2, 3, 4 and 5 on account of the inauguration ceremonies on March 5 by the railroads entering Washington. The total number of cars in and out of the Union Station was approximately 8,000, handled in 1,200 trains, including 275 extra trains. —*Railway Age Gazette*, March 9, 1917.

Communications and Books

Trespassing and Highway Crossing Accidents

PHILADELPHIA, Pa.

TO THE EDITOR:

I have read your excellent article on "Reduction in Accidents Involving Trespassers" in the February 26 issue of the *Railway Age*.

May I call attention to an additional fact which merits mention in connection with trespassing accidents.

In the last decade more effort of an educational nature has been put forth by the schools and other organizations to impress upon children and the public in general the danger of trespassing on railroad tracks than was done in the previous twenty-five years. As a result nearly every school child and a large proportion of grown folks have had this danger impressed upon their minds.

Safety is now being taught in a great many schools and trespassing is one of the things stressed by the teachers. I recently attended a meeting of teachers and prominent citizens of Philadelphia to hear reports on the progress made in safety education in the Philadelphia schools. These schools have 127 safety patrols consisting of over 2,000 boys. Each one is a "safety-man" in the strictest sense of the word. It was particularly gratifying to learn that although the good results of the safety effort were shown by the record of all injuries it was more pronounced with respect to trespassing than from any other cause, which is attributed to the instruction the children received as to the dangers of trespassing. It is my judgment that the only means through which the railroads may expect to prevent not only trespassing accidents, but also an increase in highway crossing accidents, is public education. It is a mistake for the public to assume that an appreciable percentage of the highway grade crossings can be eliminated. It is physically and economically impossible.

It is equally foolish to assume that all highway crossing accidents are attributable to willful negligence. The major cause is failure on the part of the drivers of automobiles to appreciate the danger in failing to approach highway crossings under control. Considering the number of automobiles now in use there is scarcely any increase in highway crossing casualties, but if it had not been for the "careful crossing campaigns" of the last few years, the casualties would have been at least a third greater.

No figures are available to show what highway crossing accidents cost; the amount is probably not less than five or greater than ten million dollars annually.

Seventy cents to one dollar per mile of line expended by the individual railroads on the Careful Crossing Campaign of 1927, which begins June 1, would double the activities of previous years and will, I believe, have the desired effect in the prevention of injuries.

THOMAS H. CARROW,
Chairman, Safety Section, American Railway Association.

New Books

Patents: What a Business Executive Should Know About Patents. By Roger Sherman Hoar, M.A., L.L.B., head of the patent department of Bucyrus Company, South Milwaukee, Wis. Bound in cloth, 6 in. by 8½ in., 232 pages. Published by The Ronald Press Company, 15 East 26th street, New York. Price $4.50.

This book, written by the author of "Hoar on constitutional Conventions" and other works on law and engineering, contains a large number of suggestions for getting a patent through the patent office, protecting it from infringement and using legal advice to the best advantage. It outlines a policy which experience has shown will protect a company or individual from loss of patents which quite often occurs through being outmaneuvered by a competitor. The author has taken a strictly business viewpoint, which is necessary in practical commercial and financial affairs. He has undertaken to correct the many false notions generally held by those concerned with patents and has summarized a number of popular misconceptions and set forth the truth in each case.

Explanations of legal papers and forms for contracts necessary in patent practice are given with the aim of giving the reader a thorough understanding of patent tactics. Each explanation is illustrated with concrete examples. The railway executive, engineer or attorney will find this book an excellent addition to his reference library.

Movable Bridges, Vol. II, Machinery. By Otis Ellis Hovey, Assistant Chief Engineer, American Bridge Company. 334 pages, 6 in. by 9 in. Illustrated. Bound in cloth. Published by John Wiley & Sons, New York. Price $6.

The movable bridge is a highly specialized piece of engineering work. Its design as a load-carrying structure embodies problems not encountered in static frames, while the means by which it is set into motion and again brought to rest embraces mechanical equipment of proportions not encountered in the usual classes of machinery. While, therefore, the first volume of Mr. Hovey's treatise on movable bridges is devoted to a highly specialized form of structural engineering, the second volume, as the subtitle indicates, is devoted to a branch of machine design, the requirements of which differ from the ordinary in that it treats of the problem of the slow, short-time movement of enormous weights.

While devoted to these special problems, it is essentially a self-contained treatise on machine design in that it presents all of the essential information required for the proportioning of parts and the proper selection of materials and equipment. It takes up in turn the power requirements and power application, general arrangement, selection of power units and the design of shafting, gears, bearings, brakes, etc., as well as the use of wire rope.

The treatment is largely mathematical as frequent use is made of the calculus. However, the author frequently brings out the fact that the analytical conclusions are supported by experience and data obtained in research and also presents much information on current practice. Several valuable appendices are included in the volume, among which is a complete specification for movable bridges developed by the author.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Locomotive Inspection Law as Amended March 4, 1915, and June 7, 1924, With Rules and Instructions Established in Conformity Therewith for Inspection and Testing of Locomotives Other Than Steam, compiled by Bureau of Locomotive Inspection, Interstate Commerce Commission. 127 p. Pub. by Govt. Print. Off., Washington, D. C. 40 cents.

Port Handbook of New Orleans, compiled by Board of Commissioners for the Port of New Orleans. See Index under "Railroads" for railroad facilities. Illustrated. 55 p. and 9 plates. Pub. by Board of Commissioners for the Port of New Orleans, New Orleans, La.

A Review of Railway Operations in 1926, by Julius H. Parmelee. "Reprinted by permission from *Railway Age* for January 1, 1927, and figures revised to February 26, 1927." Miscellaneous Series Bulletin No. 42. 38 p. Pub. by Bureau of Railway Economics, Washington, D. C. Apply.

Odds and Ends of Railroading

This department once knew a conductor's son and an engineman's son who got into a row over the great question of the relative importance of their dads' jobs. The conductor's kid mentioned all the "writin' and figgerin'" his pa had to do. But the hoghead's hopeful floored him: "Yeah," he said, "but look how my dad has to work to steer the engine around all them curves."

Many roads operate shuttle trains from their shops to the shop towns for the benefit of their employees, but few railroads operate free trains for school children. The Colorado & Wyoming, a subsidiary of the Colorado Fuel & Iron Company, is one of the few railroads operating such trains. It gives daily service every school day for the children in the section between Valdez and Primero, and is thus contributing its share toward solving the educational problem.

The whole of life's cycle is enacted on railway trains. People are born, they marry and they die. Which philosophical remark is called forth by the fact that a wedding ceremony was performed in the club car of "The Missourian" on the initial run of the new Missouri Pacific train between Lincoln, Kansas City and St. Louis. Herbert E. Irwin, 48, and Georgia M. Hackstadt, 28, played the principal roles. What the bride wore has not been ascertained, or even imagined, at the time of going to press.

It is said of the railway from the Indian Ocean to Lake Tanganyika, in what used to be German East Africa, that a life was lost in the building of every kilometer of its 1,250 kilometers of line. But it has its humorous side as well. For one thing, it had to build its telegraph line unusually high, to keep giraffes from breaking their necks on the wires. The story is told on this railroad of a telegram sent by a Goanese station master in the interior to his superintendent. The telegram follows: "Lions inspecting station. Please send rifle and fifty rounds of ammunition by first train. Personally, am departing immediately for the bush."

When Roger Trewick, locomotive engineman of the Coast division of the Southern Pacific, stepped down from his cab on December 31, after completing his last run, he brought to a close 57 years and 3 months continuous service with the Southern Pacific. He entered the employ of the old Central Pacific in October, 1869, as an apprentice in the copper shop at Carlin, Nevada, less than five months after the first transcontinental railroad had been connected by the golden spike at Promontory, Utah. The farewell banquet given in his honor was attended by the mayors of San Francisco and San Luis Obispo and by railroad officers as well. Mr. Trewick has the further distinction of never having received a demerit mark during all of his long service, nor was he ever involved in an accident that resulted in any fatalities.

Just a Few More Records

The Pennsylvania enters the competition of crews with long service records. Its challenge is based on the following: A crew composed of W. C. Donnelly, engineer, 47 years service; Thomas Dodds, conductor, 43 years; Pat Sheridan, brakeman, 40 years; total service, 130 years, runs on passenger trains 81 and 82 between Grand Rapids, Mich., and Muskegon. Another crew running on trains 918 and 919 between Terre Haute, Ind., and Peoria, Ill., consists of James R. Russell, conductor, 46 years; Kennedy McCool, baggageman, 38 years; Charles S. Pierce, engineer, 48 years; total service, 132 years. These three men have been members of the same crew and on the same run for 25 years while McCool and Pierce have been in the same crew and the same run for 36 years. A still longer service crew is running on passenger trains 10 and 15, between Grand Rapids, Mich., and Kalamazoo. This crew consists of T. Malone, conductor, 43 years; Oscar Rhoades, brakeman, 43 years; W. E. Race, baggageman, 48 years; P. C. Lupton, engineer, 42 years; total service, 176 years. Some records to shoot at!

A Mogul Symphony

Charles McKnight writes to comment on the statement in our February 26 issue that "some years ago it was reported that a famous European composer was working on a railroad symphony but it has never materialized." "I think you are wrong about this," says Mr. McKnight, "as I heard played by one of the symphony orchestras (probably the New York Symphony) a programmatic piece of music which I believe was called by some such title as 'One-O-Four-O.' In an account given later, it appeared that 'One-O-Four-O' was of the Mogul persuasion, which seemed to indicate that the composer was not a railroader or at least not a recent railroader. This was not, of course, a true symphony but a symphonic poem, tone poem or some such thing."

Remember "Crocker's Folly"?

Railroading, even though it is approaching its centennial, is still a young industry by comparison with others that have been in existence almost since time began. But it is quite old enough to have its relics of what is in railway history the dim past. Such a one is the historic old stone station in Boston of the Fitchburg Railroad, which was known as "Crocker's Folly" when it was built. This historic edifice is to be torn down and replaced by a garage. The building is 316 ft. long, 96 ft. wide, and two stories high. It was built in 1847 and, for many years thereafter, was known as the handsomest station in the United States. It contained a large auditorium in which Jenny Lind sang during her Boston appearances and which has been the scene of many other famous gatherings.

Captain's Finance

The Wall Street Journal retails this one:

Four years ago, a Swedish tugboat captain of the Lehigh Valley Railroad invested his savings in ten shares of the Company's stock, at $40 a share. A little later the company segrated its coal property and gave him ten shares of coal company stock, which he transferred to his wife so he could retain the railroad stock.

When Lehigh reached $110 recently, he left his trusty tug at a North river pier to confer with an official above him. In broken English he asked the official when he should dispose of his stock, believing it had gone up too fast to stay up. The official assured him that thought of the stock gave him a severe pain, admitting that he had heard that fight for control of the road was about over when the stock reached $85 a share.

"So they bane fighting to buy our railroad," said the Swede, taking his stock certificate out of his coat pocket, refolding it with great determination and putting it back. "Vell, if that's the case and should you seen those fighters, tell them that Captain Victor's stock can be bought privately by consulting him on his vessel."

And out and down the Harbor rode the mariner, whistling.

Regular Chow

Ciro's has its charms indeed,
And Claridge's and the Ritz,
But, for choice, I'd rather feed
In the shack with Conny Fritz.

Quails on toast are quite a treat,
Not to mention truffled goose,
But, for chow, I'd rather eat
Ham and eggs in our caboose.

HEAD SHACK.

NEWS *of the* WEEK

Florida East Coast—Photo by M. B. Cooke

THE RAILWAY TREASURY OFFICERS' ASSOCIATION will hold its annual meeting at Detroit, Mich., on Thursday, Friday and Saturday, September 1, 2 and 3.

SIGNALMEN on the Southern Pacific have been granted an increase of six per cent in wages following the settlement of their claims by the United States Board of Arbitration.

D. B. HANNA, formerly president of the Canadian National, has been appointed head of the liquor control commission of the province of Ontario, which will, under the law recently passed, have charge of all sales of alcoholic liquors in that province.

THE LEHIGH VALLEY and the Pennsylvania are drawing up plans and specifications for a two-track bridge over Newark Bay from Greenville to Newark, to cost somewhere around $3,000,000. The bridge will be of concrete structural steel and it is expected that bids will be asked in about 30 days.

THE TRAFFIC CLUB OF PITTSBURGH (Pa.) will hold its annual dinner at the William Penn Hotel, Pittsburgh, on Thursday evening, March 10. The toastmaster will be Sir Henry Worth Thornton and the principal speaker will be the Reverend Canon Allan P. Shatford, of Montreal.

THE FIRE which destroyed a pier and other property of the Pennsylvania Railroad at Jersey City on March 3, briefly reported last week, is said to have caused a total loss of $1,500,000 including damage to a lumber yard and other property not belonging to the railroad. Because of the high wind prevailing at the time the fire-fighting facilities of both Jersey City and Manhattan were taxed severely to control the flames. Nine firemen were injured.

THE REPEAL OF THE MISSOURI LAW which requires a 22-ft. clearance at all bridges, viaducts and other structures over railroad tracks in the state was urged by E. R. Kinsey, president of the St. Louis Board of Public Service; L. R. Bowen, city engineer of bridges and buildings, and Assistant City Counselor Oliver P. Senti, of St. Louis, Mo., on March 2, before the Missouri House Committee on Roads and Highways. They contended an 18-ft. clearance is sufficient for safety.

ONE HUNDRED AND SEVENTEEN BARRELS OF BEER seized, by the authorities, on the Pittsburgh & Lake Erie at Homestead, Pa., on March 5, are said to be valued at $25,000. The court order called for the seizure not only of the beer but of the two cars containing it. The beer was billed as oil; and an officer of the government, expressing his belief that the railroads were not ignorant of the real contents of the barrels, said that the cars, as well as the contents, should be forfeited to the government.

Southern Trainmen's Wages Advanced

The Southern Railway has effected a settlement with the trainmen and conductors employed on its system lines, effective on March 15, on the basis of the recent settlement made by the Brotherhood of Railroad Trainmen and the Order of Railway Conductors with the southeastern roads generally, which provided for an increase of 7½ per cent in wages. This ends the bonus system which has been in effect for the past three years on the Southern.

Harriman Medals for 1926

The American Museum of Safety plans to award gold, silver and bronze medals for excellence in railroad safety records, for the year 1926, the same as in former years. Arthur Williams, president of the museum, advises that the general plan will be the same as that heretofore followed, the records of the Interstate Commerce Commission being the principal basis on which comparisons will be made; though the committee is considering some changes in classification and may take into account differences in traffic density. The ceremony awarding the medals to certain railroads, recently, for the year 1925, has been reproduced in motion picture theatres throughout the country.

The Cascade Tunnel

An important phase of the work on the Cascade tunnel of the Great Northern was completed on March 4, when the heading being driven westward from the east portal at Berne, Wash., met the heading that had been driven eastward from the bottom of a shaft at Mill Creek. The distance between Berne and the Mill Creek shaft is 12,738 ft. The total length of the tunnel, which is also being driven westward from Mill Creek shaft and eastward from the west portal at Scenic, Wash., is to be 41,143 ft.

Hyatt Bearings on the St. Paul

A passenger coach on the Chicago, Milwaukee & St. Paul, the six-wheel trucks of which are equipped with Hyatt roller bearings, is reported to have made 300,000 miles since the roller bearings were applied. A recent examination of the bearings is said to have shown them to be free from wear or other signs of deterioration. On the basis of the condition of the bearings at the present time, it is estimated conservatively that they will make 600,000 miles. The coach is in service between Chicago and the Pacific Coast, making a round trip every nine days.

Esch Reappointment Urged

Chairman Parker of the House committee on interstate and foreign commerce, and Representatives Newton of Minnesota and Mapes of Michigan, also members of the committee, called on President Coolidge on March 9 to urge him to reappoint John J. Esch as a member of the Interstate Commerce Commission upon the expiration of his term at the end of this year. Mr. Esch was for many years a member of the House committee and was its chairman at the time of the passage of the transportation act. There has been a good deal of speculation in Washington as to his reappointment because there are now two commissioners from Wisconsin, Commissioner Meyer being the other, in view of the agitation which has been going on in the Senate for regional appointments to the commission.

Engineer Wage Demands

Demands for wage increases of 15 per cent for all enginemen in the United States and Canada with the exception of the southeastern division were served on the railroads on March 5, by the general chairman of the Brotherhood of Locomotive Engineers. A similar notice has already been served in the southeastern division. All members of the brotherhood have approved the action, which effects over 90,000 men. The demand is supported by the claim that changed conditions involving longer trains and longer runs have brought more responsibility to the enginemen.

Employees' Earnings in December

Class I railroads had 1,773,864 employees as of the middle of the month of December, according to the Interstate Commerce Commission's monthly summary of railroad wage statistics, and the total compensation for the month was $252,939,491. This was a decrease of 3 per cent in the number as compared with November and an increase of 1.2 per cent as compared with December, 1925. The total compensation, however, shows an increase of 3.3 per cent, owing to slight increases in the average hourly earnings and the number of hours worked per employee.

Government Need Not Pay in Advance to Secure Land-Grant Deductions

The Supreme Court of the United States, affirming 59 Ct. Cls. 886, holds that the government may avail itself of party rates with the statutory deduction of 50 per cent therefrom on land-grant aided lines without paying cash in advance. The well-settled practice of the government is to issue requisitions for transportation and to require the rendition of bills therefor to be examined and audited by its accounting officers. This method was recognized and accepted by the railroad in the present case. Moreover, station agents generally are not familiar with land-grant legislation so as to be able readily to make the necessary computations.—L. & N. v. U. S. Opinion by Mr. Justice Sutherland. Decided February 21, 1927.

A Bill to Include Short Lines in Mergers

Senator Mayfield, of Texas, on February 28 submitted in the Senate a concurrent resolution declaring it to be the policy of Congress that there should be no acquisition of control by stock ownership, merger or grouping of railroads into a unified system, unless the application for authority "shall make reasonable provision for the possible incorporation of every short and weak line that may be in operation in the territory covered or to be covered. * * * or unless by affirmative testimony it is shown to be impossible to include such line upon reasonable terms, or unless the abandonment or omission of such line from the proposed plan is approved by order of the Interstate Commerce Commission."

Railroad Y.M.C.A. Spent $1,000,000 on Additions in 1926

The Transportation Department of the National Council of the Y. M. C. A. has made public a list of its expenditures for new buildings, additions to buildings and improvements in the railroad department during 1926. The total was $1,008,041. The largest expenditure was $400,000 at Russell, Ky. The next largest, $150,000 at Selkirk, N. Y. Other places where considerable outlay was made include Corbin, Ky., $76,000; Elkhart, Ind., $75,000; Sunbury, Pa., $60,000; South Chicago, Ill., and St. Louis, Mo., $35,000.

Car Men Advance Convention Date

The annual convention of the Railway Car Department Officers' Association, formerly the Chief Interchange Car Inspectors' and Car Foremen's Association, will be held at the Hotel Sherman, Chicago, on August 23, 24 and 25, instead of in September as in previous years. The new date is a result of a decision of the executive committee made at a meeting on March 2 and 3. In addition to this change, the committee voted to make the new name of the association (adopted last fall to cover the increased scope of the association's work) officially effective on March 3. Suggestions for subjects for the 1927 convention were considered, special emphasis being placed on the need for more detailed consideration of loading rules.

Violations of Section 10 of Interstate Commerce Act

Indictments against the Alton Iron & Metal Company and the Chicago Smelting & Refining Corporation charging violation of Section 10 of the Interstate Commerce Act were filed in open court on February 16 and 23, respectively. The indictment of 25 counts against the Alton Iron & Metal Company covers 25 carload shipments of scrap iron, on which it is alleged that the shipper, in his shipping instructions, furnished weights which were less than the actual weights. All of the shipments moved interstate. The indictment against the Chicago Smelting & Refining Corporation charges this firm with falsely billing and falsely representing interstate shipments of babbitt metal and white alloys as lead residue and pig lead. There are many shipments misdescribed, but the government only named five in the indictment.

The Twelve-Hour Day on the D. T. & I.

The 16-hour law, says the D. T. & I. Railroad News, is being successfully replaced on the Detroit, Toledo & Ironton by a 12-hour law. The Government-regulated maximum daily period in train or engine service has been fixed at 16 hours for the past 20 years; but on the D. T. & I., for the past two months, this 16-hour law has been operating very satisfactorily in a 12-hour guise. And every effort is being made to bring the maximum workday down to eight successive hours out of every 24, for all employees irrespective of their duties.

The few violators of the "12-hour rule" in the past two months have been relieved of their work on the road in the same manner as is customary when the 16-hour law is in danger of being broken. Studies of the working of the new rule indicate that the 12-hour maximum has a tendency to accelerate the work of individuals.

Special Train to Montreal Convention of Mechanical Division

Special cars and, if necessary, special trains will be provided for the accommodation of members of the A. R. A. Mechanical division from Chicago and west desiring to go direct to Montreal, Que., for the annual convention next June. The route will be via the Grand Trunk, trains leaving Chicago at 5:30 p.m. on both Saturday and Sunday, June 4 and 5, and arriving at Montreal at 5:00 p.m. Sunday and Monday, June 5 and 6.

Special sleeping cars will be provided and, if enough are required, run as a separate section of the International Limited. There will be several compartment cars as well as open section sleepers. In order that the railroad may be enabled to provide sufficient and proper equipment, reservations for space should be made early to C. G. Orttenburger, general western passenger agent of the Grand Trunk, 108 West Adams street, Chicago.

Highway Crossing Signals on the D., T. & I.

The Detroit, Toledo & Ironton has installed 14 automatic flashing light signals at highway crossings in Adrian, Mich., all within a space of 2½ miles, these signals taking the place of signs, watchmen, bells and wigwags formerly employed. Officers of the road report marked satisfaction with the new and uniform protection, as compared with previous conditions. This district is mostly residential; but where the noise is not objectionable, a bell, locomotive type, is added, the bell being driven by a motor energized from the block circuit.

The flashing signals are energized by six-volt storage batteries charged, in most cases, by means of electrolytic rectifiers from available local power lines.

Some of the circuit connections overlap one another, the crossings being only about 600 ft. apart. On this section of the road, the speed of all trains is limited to eight miles an hour and each signal is arranged to go into operation at least 30 seconds before the locomotive reaches the crossing.

The signal post foundations as well as the battery wells are made of reinforced concrete. The posts are embedded in 3 ft. of concrete and are held in place by supports attached to the top so that the

(*Continued on page* 913)

Revenues and Expenses of Railways

MONTH OF JANUARY OF CALENDAR YEAR 1927

Name of road	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
Akron, Canton & Youngstown..... Jan.	171	$252,455	$346	$261,414	$31,660	$31,884	$10,274	$79,017	$14,808	$167,603	64.1	$93,811	$73,386	$42,421	$17,866
Ann Arbor..... Jan.	293	376,135	25,481	417,038	49,649	91,611	12,452	190,357	11,945	355,474	85.2	61,564	38,333	15,127	92,067
Atchison, Topeka & Santa Fe..... Jan.	9,346	11,385,585	3,541,054	16,144,540	1,790,631	3,277,376	435,706	5,359,974	399,919	11,196,689	69.4	4,947,851	3,514,313	3,469,720	2,771,510
Gulf, Colorado & Santa Fe..... Jan.	1,944	3,233,928	279,610	3,647,089	539,492	668,492	55,246	1,244,101	66,346	2,573,356	70.6	1,073,733	985,902	766,546	232,873
Panhandle & Santa Fe..... Jan.	954	1,503,404	178,994	1,752,189	207,122	327,709	12,393	665,487	27,630	1,237,936	70.7	514,253	457,466	301,374	326,916
Atlanta & West Point..... Jan.	93	156,309	68,854	253,768	44,480	23,157	11,572	93,089	13,128	190,305	75.0	63,464	48,085	35,479	18,915
Western of Alabama..... Jan.	133	177,146	62,100	260,635	37,429	53,791	12,996	83,409	11,962	203,925	78.2	56,710	43,536	42,317	29,838
Atlanta, Birmingham & Coast..... Jan.	639	356,780	37,612	435,993	107,940	85,647	27,683	175,190	18,879	428,441	98.3	7,552	—6,685	—15,751	11,355
Atlantic Coast Line..... Jan.	4,996	4,986,140	1,880,347	7,403,321	1,063,732	1,428,711	166,886	2,748,300	180,927	5,619,288	75.9	1,784,033	1,281,113	1,298,719	2,178,637
Charleston & Western Carolina..... Jan.	342	257,782	18,702	287,368	77,657	46,273	5,973	120,255	6,395	256,553	89.3	30,815	9,315	12,778	58,691
Baltimore & Ohio..... Jan.	5,314	16,347,486	2,171,948	19,697,445	2,330,736	4,539,264	473,791	7,626,056	602,303	15,748,201	80.0	3,949,244	2,965,183	2,917,429	3,081,625
Baltimore & Ohio Chicago Term... Jan.	75	.....	.....	281,935	32,874	43,715	2,736	170,725	14,113	270,995	96.1	10,940	—36,140	57,601	74,805
Staten Island Rapid Transit..... Jan.	23	91,218	113,074	225,108	35,288	22,605	2,035	105,780	14,484	180,192	80.1	44,916	27,891	—7,384	1,619
Bangor & Aroostook..... Jan.	614	671,591	82,801	779,956	109,573	124,264	5,320	204,780	23,568	470,653	60.3	309,303	248,046	277,673	182,836
Belt Ry. Co. of Chicago..... Jan.	32	.....	.....	561,487	40,459	67,266	3,415	291,049	10,326	412,515	73.5	148,972	102,586	140,686	161,819
Bessemer & Lake Erie..... Jan.	228	784,706	14,251	819,160	58,948	312,240	15,192	308,554	31,695	710,011	86.7	109,149	73,894	150,176	—25,475
Bingham & Garfield..... Jan.	33	45,749	.....	47,402	11,945	8,400	1,944	11,830	4,583	38,848	82.0	8,554	819	17,712	20,088
Boston & Maine..... Jan.	2,111	3,870,481	1,692,097	6,225,025	667,438	1,283,711	73,349	2,738,151	232,611	5,009,954	80.5	1,215,071	916,675	655,430	545,750
Brooklyn Eastern Dist. Term..... Jan.	9	107,409	.....	113,670	4,819	12,185	647	47,704	5,714	71,069	62.5	42,601	36,226	36,226	43,174
Buffalo & Susquehanna R. R. Corp.. Jan.	253	129,129	2,910	137,412	27,893	53,690	1,760	52,539	8,436	144,318	105.0	—6,906	—9,006	10,626	758
Buffalo, Rochester & Pittsburgh..... Jan.	601	1,413,578	109,584	1,568,672	134,514	487,355	28,295	611,012	43,461	1,307,252	83.3	261,420	211,420	251,078	274,952
Canadian Pacific Lines in Maine.... Jan.	233	301,277	31,976	345,592	23,532	67,211	6,013	159,383	4,194	260,333	75.3	85,259	71,959	49,918	45,305
Canadian Pacific Lines in Vermont.. Jan.	85	120,627	36,977	178,669	19,297	30,390	2,355	108,207	2,533	162,782	91.1	15,887	11,137	10,688	.....
Central of Georgia..... Jan.	1,911	1,695,034	444,080	2,333,056	285,846	424,991	70,294	921,407	112,687	1,821,867	78.1	511,189	399,302	383,573	359,862
Central New Jersey..... Jan.	690	3,410,830	708,395	4,400,982	423,834	1,076,579	43,729	2,050,959	142,582	3,763,836	85.5	637,146	485,686	370,684	—209,787
Central Vermont..... Jan.	433	491,606	106,894	660,500	86,734	116,125	17,643	347,110	25,058	594,339	90.0	66,161	47,531	31,700	51,334
Chesapeake & Ohio..... Jan.	2,650	9,730,529	751,674	10,891,147	1,444,193	2,552,593	119,824	3,148,728	267,956	7,564,614	69.5	3,326,533	2,617,692	2,717,166	2,299,621
Chicago & Alton..... Jan.	1,055	1,630,527	549,615	2,392,892	210,268	538,834	68,692	972,725	55,573	1,862,126	77.8	530,766	426,415	256,072	157,379
Chicago & Eastern Illinois..... Jan.	945	1,856,193	388,771	2,403,360	239,641	557,842	83,030	974,835	72,020	1,942,491	80.8	460,869	345,612	226,792	182,678
Chicago & Illinois Midland..... Jan.	Not yet filed.														
Chicago & North Western..... Jan.	8,460	7,437,451	2,193,141	10,812,581	1,107,252	2,595,436	234,252	4,945,727	347,260	9,277,521	85.8	1,535,060	733,110	550,850	1,195,531
Chicago, Burlington & Quincy..... Jan.	9,391	8,929,573	1,821,708	11,896,797	1,080,626	2,185,310	248,358	4,756,417	356,371	8,750,916	73.6	3,145,881	2,167,187	1,906,757	1,902,578
Chicago Great Western..... Jan.	1,496	1,428,271	290,536	1,856,447	181,812	396,666	76,287	843,090	56,801	1,566,084	84.4	290,363	203,052	75,533	111,444
Chicago, Indianapolis & Louisville... Jan.	650	1,075,559	226,141	1,438,811	121,816	324,066	41,267	600,407	39,145	1,142,083	79.4	296,728	228,788	123,311	167,308
Chicago, Milwaukee & St. Paul..... Jan.	11,200	9,076,358	1,528,603	11,776,259	1,186,442	3,008,173	254,224	5,207,451	386,694	10,112,659	85.9	1,663,600	910,929	518,207	781,293
Chicago River & Indiana..... Jan.	19	.....	.....	547,570	53,483	76,430	958	228,592	14,976	374,439	68.4	173,131	133,880	251,939	270,658
Chicago, Rock Island & Pacific..... Jan.	7,561	7,569,315	1,934,989	10,386,563	1,390,622	2,196,641	218,779	4,187,453	309,054	8,336,399	80.3	2,050,164	1,412,828	977,653	707,425
Chicago, Rock Island & Gulf..... Jan.	458	508,114	96,876	643,592	64,167	73,704	19,917	227,198	16,711	370,283	57.5	273,309	246,725	221,068	82,001
Chic., St. Paul, Minn. & Omaha.... Jan.	1,746	1,434,515	409,433	2,001,866	264,903	420,162	38,019	996,908	77,639	1,807,429	90.3	194,437	85,608	58,958	133,918
Cincinnati, Indianapolis & Western.. Jan.	347	372,116	28,626	422,856	55,091	135,332	16,180	176,529	16,058	400,723	94.8	22,133	4,133	—36,792	36,065
Clinchfield Railroad..... Jan.	309	671,858	27,996	712,107	55,496	182,159	22,727	149,576	20,122	430,092	60.4	282,015	207,015	306,634	327,213
Colorado & Southern..... Jan.	1,054	956,372	103,732	1,140,623	175,047	250,235	12,998	386,622	45,417	877,477	76.9	263,146	199,553	200,075	116,611
Ft. Worth & Denver City..... Jan.	491	922,760	250,999	1,245,284	132,183	196,770	16,254	366,783	41,949	762,768	61.3	482,516	409,957	404,744	267,554
Wichita Valley..... Jan.	271	167,113	20,571	195,747	17,088	10,753	26	54,219	2,428	84,386	43.1	111,361	101,590	80,530	56,680
Columbus & Greenville..... Jan.	167	118,170	28,784	153,647	35,605	18,526	2,892	56,395	20,123	133,541	86.9	20,106	18,602	2,374	422
Conemaugh & Black Lick..... Jan.	23	.....	60,237	127,078	11,372	31,526	933	91,591	3,520	138,942	109.3	—11,864	—13,064	—12,926	—10,969
Delaware & Hudson..... Jan.	881	2,825,572	306,530	3,376,005	454,038	1,034,786	45,464	1,383,422	141,016	3,083,434	91.3	292,571	175,571	136,866	—601,302
Delaware, Lackawanna & Western... Jan.	999	4,653,201	1,085,686	6,492,810	647,437	1,374,326	127,327	3,058,312	182,595	5,444,216	83.8	1,048,594	578,498	541,082	158,791
Denver & Rio Grande Western..... Jan.	2,535	2,185,964	284,150	2,633,285	430,938	502,092	53,311	803,506	86,436	1,901,898	72.2	731,387	546,242	614,008	601,100
Denver & Salt Lake..... Jan.	255	303,370	23,457	344,989	58,008	115,823	1,540	79,404	9,581	264,356	76.6	80,633	74,596	74,520	91,989
Detroit & Mackinac..... Jan.	375	71,383	17,966	100,442	14,996	29,943	1,614	49,689	5,687	101,816	101.4	—1,374	—11,186	—8,991	—5,356
Detroit & Toledo Shore Line..... Jan.	50	469,479	.....	475,539	27,830	36,088	3,426	121,664	7,658	196,666	41.4	278,873	250,296	141,765	107,889
Detroit Terminal..... Jan.	19	.....	.....	133,059	12,824	14,042	1	71,565	3,692	102,124	76.7	30,935	19,430	10,728	3,732
Detroit, Toledo & Ironton..... Jan.	495	794,722	6,107	812,733	76,677	151,428	12,855	285,702	43,656	570,312	70.2	242,421	204,803	140,454	266,533
Duluth & Iron Range..... Jan.	274	94,230	8,193	115,059	50,040	101,992	2,312	103,635	18,805	276,784	240.6	—161,725	—208,326	—212,719	—116,183
Duluth, Missabe & Northern..... Jan.	305	86,596	6,659	108,747	117,644	188,067	2,933	140,052	24,057	472,659	434.6	—363,912	—457,982	—462,747	—261,544
Duluth, Winnipeg & Pacific..... Jan.	178	197,242	15,110	217,977	21,635	48,400	4,315	82,711	6,928	164,747	75.6	53,230	42,331	51,833	29,271
Elgin, Joliet & Eastern..... Jan.	460	1,802,493	1	1,961,714	179,451	382,972	14,068	742,106	46,853	1,364,663	69.6	597,051	497,620	356,750	231,088
Erie Railroad..... Jan.	2,047	6,533,948	966,384	8,160,755	923,404	2,415,384	156,124	3,724,681	284,741	7,551,730	92.5	609,025	220,197	310,177	—43,177
Chicago & Erie..... Jan.	269	912,513	57,284	1,058,237	102,694	160,922	24,016	402,016	42,032	731,452	69.1	326,785	273,574	—72,587	—161,039
New Jersey & New York..... Jan.	45	22,712	94,649	121,435	17,666	24,294	1,528	78,085	3,979	125,538	103.4	—4,103	—7,818	—40,016	—31,558
N. Y., Susquehanna & Western.... Jan.	134	321,279	50,158	414,009	52,105	68,503	4,998	246,715	12,713	385,019	93.0	28,990	425	—21,632	—23,892
Evansville, Indianap's & Terre Haute. Jan.	146	195,977	7,071	209,390	23,622	31,265	2,280	78,067	6,331	141,555	67.6	67,835	60,907	18,501	35,988

Revenues and Expenses of Railways

MONTH OF JANUARY OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
Florida East Coast	Jan.	846	$1,160,441	$704,900	$2,079,299	$358,305	$314,250	$46,871	$779,012	$60,955	$1,591,117	76.5	$488,182	$332,235	$132,891	$666,450
Fort Smith & Western	Jan.	249	130,658	15,896	156,128	25,532	31,509	6,151	55,048	8,184	125,974	80.7	30,154	24,642	11,325	14,748
Galveston Wharf	Jan.	13	.....	.....	191,086	40,821	4,087	1,553	39,594	3,798	102,430	53.6	88,656	71,656	71,756	6,267
Georgia R. R.	Jan.	328	353,783	74,591	458,404	42,828	85,534	24,419	216,433	23,164	392,578	85.6	65,826	54,908	67,912	74,536
Georgia & Florida	Jan.	406	119,971	16,688	143,999	22,869	23,783	9,480	53,843	7,983	118,180	82.1	25,819	18,319	16,923	14,514
Grand Trunk Western	Jan.	347	1,302,890	177,684	1,563,614	105,585	379,728	38,540	595,965	60,317	1,178,832	75.4	384,782	300,511	188,337	157,636
Atlantic & St. Lawrence	Jan.	166	193,110	30,798	240,672	27,789	44,777	5,774	124,604	7,814	211,769	88.0	28,903	15,953	—49,221	—31,340
Chic., Det. & Canada Gr. Tr. Jct.	Jan.	59	337,101	2,140	384,416	15,126	19,519	4,271	112,274	4,877	156,067	40.6	228,349	218,089	172,521	120,000
Detroit, Grand Haven & Milwaukee	Jan.	189	496,130	33,660	586,025	42,967	60,218	12,090	253,634	17,045	385,996	65.9	200,029	187,002	91,356	90,480
Great Northern	Jan.	8,164	4,939,137	1,054,847	6,677,040	685,344	1,618,027	209,589	2,928,588	238,823	5,746,080	86.1	930,960	259,545	302,279	870,975
Green Bay & Western	Jan.	234	110,315	9,206	125,812	17,716	19,693	4,338	52,926	2,893	97,566	77.5	28,246	20,246	20,531	28,095
Gulf & Ship Island	Jan.	307	261,710	48,335	338,850	109,487	82,649	5,731	131,178	9,303	341,910	100.9	—3,060	—26,861	—41,311	—62,090
Gulf, Mobile & Northern	Jan.	611	485,860	32,344	540,291	92,143	81,222	26,340	154,088	24,567	378,590	70.07	161,701	124,242	102,610	114,636
Hocking Valley	Jan.	348	1,164,832	74,131	1,321,017	156,523	378,280	16,232	457,005	42,182	1,050,217	79.5	270,800	159,648	217,507	272,894
Illinois Central	Jan.	4,874	9,619,091	2,257,274	12,693,655	1,366,438	2,820,293	322,609	4,884,104	352,703	9,797,920	77.2	2,895,735	2,028,242	1,963,658	2,391,386
Yazoo & Mississippi Valley	Jan.	1,710	1,831,911	366,691	2,349,926	394,195	387,111	55,469	896,818	73,384	1,811,326	77.1	538,600	352,610	278,904	234,803
Illinois Central System	Jan.	6,584	11,460,884	2,628,570	15,058,068	1,760,633	3,212,313	378,078	5,789,238	426,124	11,622,508	77.2	3,435,560	2,377,153	2,250,980	2,627,800
Kansas City, Mexico & Orient	Jan.	272	169,469	5,536	182,947	46,617	51,265	7,490	75,973	27,004	208,326	113.9	—25,379	—29,440	—12,039	478
Kans. City, Mex. & Orient of Tex.	Jan.	465	406,000	20,180	441,008	88,520	69,942	8,380	142,102	28,405	336,813	76.4	104,195	97,190	36,775	10,271
Kansas City Southern	Jan.	784	1,185,765	118,349	1,444,787	147,811	250,590	48,038	493,876	74,533	1,014,319	70.2	430,468	320,057	299,007	370,868
Texarkana & Ft. Smith	Jan.	81	197,382	9,695	226,181	25,178	22,473	5,320	69,670	9,988	133,492	59.0	92,689	77,745	43,860	65,384
Kansas, Oklahoma & Gulf	Jan.	Not yet filed.														
Lake Superior & Ishpeming	Jan.	160	52,622	4,109	60,694	24,327	27,145	726	34,618	5,874	92,690	152.7	—31,996	—43,594	—45,586	—35,073
Lake Terminal	Jan.	13	.....	.....	92,542	11,426	20,083	.....	55,892	1,872	89,273	96.5	3,269	—2,831	—11,094	—12,512
Lehigh & Hudson River	Jan.	96	250,448	2,178	274,210	27,596	42,409	1,950	116,107	9,351	197,413	72.0	76,797	62,906	36,376	1,998
Lehigh & New England	Jan.	217	384,253	1,354	391,854	30,977	99,322	5,522	146,717	16,810	299,348	76.4	92,506	77,877	78,411	—52,195
Lehigh Valley	Jan.	1,363	4,706,846	642,085	5,815,977	569,744	1,486,294	136,890	2,777,997	192,664	5,189,048	89.2	626,929	414,469	158,895	—487,290
Louisiana & Arkansas	Jan.	302	304,084	16,687	328,160	66,355	65,527	11,833	106,170	11,061	260,833	79.5	67,327	38,173	21,567	53,297
Louisiana Ry. & Nav. Co.	Jan.	337	276,855	15,955	309,665	65,153	47,496	12,391	154,509	9,851	285,333	92.1	24,332	2,347	—33,723	—41,450
Louisiana Ry. & Nav. Co. of Tex.	Jan.	206	82,036	5,457	92,023	35,946	13,761	1,875	41,483	6,301	99,220	107.8	—7,197	—11,200	—24,146	—16,623
Louisville & Nashville	Jan.	5,059	9,111,557	1,859,936	11,588,241	1,737,696	2,736,056	306,364	4,282,775	338,613	9,441,026	81.5	2,147,215	1,626,491	1,572,030	1,942,275
Louisville, Henderson & St. Louis	Jan.	199	258,376	51,963	327,927	48,442	50,494	5,917	106,679	11,635	223,167	68.1	104,760	82,158	77,269	104,044
Maine Central	Jan.	1,121	1,358,566	321,510	1,820,846	265,581	301,434	13,928	755,586	50,752	1,386,882	76.2	433,964	320,048	264,161	198,863
Midland Valley	Jan.	364	284,026	34,662	332,177	25,437	33,303	7,713	94,352	16,301	177,106	53.3	155,071	135,153	115,264	112,930
Minneapolis & St. Louis	Jan.	1,627	879,156	101,341	1,038,992	103,330	274,801	35,685	573,118	43,824	1,030,250	99.2	8,742	—54,086	—83,598	19,046
Minneapolis, St. Paul & S. S. Marie	Jan.	4,396	2,491,374	515,838	3,253,441	413,633	712,377	69,153	1,484,835	116,924	2,812,442	86.4	440,990	210,486	108,212	77,552
Duluth, South Shore & Atlantic	Jan.	589	275,340	84,037	390,192	53,506	69,290	7,067	182,317	13,060	330,244	84.6	59,948	30,948	15,290	39,595
Spokane International	Jan.	165	86,589	10,097	102,512	17,479	9,393	3,714	37,088	6,472	75,395	73.5	27,117	21,706	15,906	22,498
Mississippi Central	Jan.	161	126,967	9,576	141,108	21,830	26,339	8,065	37,969	7,996	102,199	72.4	38,909	29,877	33,136	35,752
Missouri & North Arkansas	Jan.	364	108,407	16,868	135,169	35,167	19,230	9,297	54,868	7,531	126,093	93.2	9,076	6,695	—3,063	—15,868
Missouri-Kansas-Texas	Jan.	1,799	2,242,450	378,271	2,818,614	259,977	724,132	72,131	780,297	90,983	1,938,692	68.8	879,922	693,157	746,910	766,720
Missouri-Kansas-Texas of Texas	Jan.	1,389	1,433,561	344,621	1,930,051	231,525	284,397	50,717	768,119	65,934	1,414,675	73.3	515,376	463,134	278,930	167,330
Missouri Pacific	Jan.	7,348	8,410,100	1,340,511	10,535,302	1,191,803	2,175,892	279,063	4,132,901	346,987	8,169,050	77.5	2,366,252	1,914,764	1,522,101	1,508,693
Gulf Coast Lines	Jan.	973	1,149,066	194,278	1,412,057	260,938	210,168	40,019	442,042	55,117	1,009,663	71.48	402,394	337,619	245,945	151,031
International-Great Northern	Jan.	1,159	1,201,248	222,448	1,591,132	266,581	280,905	35,009	660,697	61,875	1,276,635	80.23	314,497	266,385	160,850	90,424
San Antonio, Uvalde & Gulf	Jan.	318	118,471	26,963	157,895	39,112	21,873	4,273	50,378	5,263	121,756	77.11	36,139	32,666	6,210	18,392
Texas & Pacific	Jan.	1,954	2,327,984	489,473	3,010,283	507,294	523,241	69,259	1,161,115	98,899	2,353,667	78.2	656,616	497,876	354,109	405,934
Mobile & Ohio	Jan.	1,161	1,237,918	118,489	1,443,367	229,177	253,150	48,971	559,988	46,934	1,138,337	79.4	295,030	211,565	157,557	268,348
Monongahela	Jan.	169	663,228	29,820	699,191	75,000	65,000	1,191	195,041	9,683	345,640	49.4	353,551	318,551	221,637	181,855
Monongahela Connecting	Jan.	7	.....	.....	179,157	19,487	34,592	375	82,619	3,922	140,995	78.7	38,162	30,349	26,403	54,520
Montour	Jan.	57	132,487	344	133,885	16,392	46,957	1,237	30,981	6,918	102,485	76.5	31,400	22,677	53,598	2,558
Nashville, Chattanooga & St. Louis	Jan.	1,259	1,276,530	367,436	1,786,830	208,393	414,965	87,504	731,435	83,791	1,535,829	86.0	251,001	174,860	221,439	287,006
Nevada Northern	Jan.	165	70,904	7,102	84,711	13,321	6,580	891	17,799	4,651	43,429	51.2	41,282	34,724	32,367	24,418
Newburgh & South Shore	Jan.	7	.....	.....	122,292	5,587	40,418	.....	61,156	4,221	111,382	91.1	10,910	—1,099	4,161	8,475
New Orleans Great Northern	Jan.	274	239,626	24,616	273,819	44,957	51,485	6,100	78,607	10,797	192,247	70.2	81,572	64,852	45,099	60,266
New York Central	Jan.	6,930	18,706,990	8,576,643	31,003,299	3,650,991	6,551,185	385,577	12,283,687	1,374,242	24,758,964	79.9	6,244,335	4,207,462	3,957,985	4,272,601
Cincinnati Northern	Jan.	244	343,732	6,744	356,129	40,253	78,749	5,993	135,192	11,562	270,698	76.0	85,431	64,729	38,303	60,491
Cleve., Cin., Chicago & St. Louis	Jan.	2,397	5,400,671	1,396,315	7,364,566	681,115	1,789,670	137,050	3,022,185	282,895	5,988,728	81.3	1,375,838	999,170	893,303	1,142,689
Indiana Harbor Belt	Jan.	116	.....	.....	903,200	124,778	152,960	5,747	459,560	26,133	769,060	85.2	134,140	105,359	61,624	66,433
Michigan Central	Jan.	1,855	4,351,253	1,773,624	6,759,916	692,639	1,278,180	129,828	2,506,894	305,201	5,019,103	74.3	1,740,813	1,322,692	1,269,213	1,576,326
Pittsburgh & Lake Erie	Jan.	231	2,376,881	253,054	2,715,776	404,578	917,761	23,945	987,500	82,901	2,417,926	89.0	297,850	137,248	616,521	780,524
New York, Chicago & St. Louis	Jan.	1,691	4,097,623	136,477	4,358,967	459,844	900,203	124,522	1,692,985	215,774	3,401,106	78.0	957,861	689,012	464,842	760,378
N. Y., New Haven & Hartford	Jan.	1,911	4,912,294	4,161,096	10,266,730	1,444,171	2,280,357	75,061	4,052,485	324,109	8,358,063	81.4	1,908,667	1,394,560	771,154	1,297,201
Central New England	Jan.	264	559,024	2,876	581,822	96,928	109,506	7,231	228,847	16,819	459,331	78.9	122,491	89,834	25,753	—1,669
New York Connecting	Jan.	20	218,774	.....	243,032	32,113	8,536	.....	67,188	1,567	109,403	45.0	133,629	93,129	80,227	110,864

Revenues and Expenses of Railways

MONTH OF JANUARY OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
New York, Ontario & Western	Jan.	569	$527,354	$89,696	$772,336	$112,836	$234,988	$18,813	$475,800	$36,745	$884,849	114.6	—$112,513	—$162,522	—$207,999	$224,805
Norfolk & Western	Jan.	2,241	8,455,039	662,880	9,401,735	1,401,225	2,031,969	98,672	2,623,764	206,780	6,369,766	67.8	3,031,969	2,181,677	2,364,657	2,703,952
Norfolk Southern	Jan.	931	646,906	56,645	742,408	98,243	122,445	22,145	288,452	30,770	559,657	75.4	182,771	134,176	113,923	68,557
Northern Pacific	Jan.	6,682	4,456,034	929,366	5,969,623	643,972	1,420,872	190,341	2,656,955	251,793	5,257,172	88.1	712,451	51,327	343,555	1,011,734
Northwestern Pacific	Jan.	477	233,748	123,447	397,451	98,559	74,976	4,805	201,495	18,931	398,448	100.3	—997	—41,720	—48,953	—13,482
Pennsylvania R. R.	Jan.	10,527	36,390,061	12,593,450	53,722,393	6,562,683	13,318,427	791,775	22,586,024	1,579,803	45,634,595	84.9	8,087,798	6,093,118	4,719,637	5,807,481
Baltimore, Chesapeake & Atlanta	Jan.	130	47,701	20,244	71,095	9,081	16,140	1,527	72,761	3,191	102,700	144.5	—31,605	—31,650	—32,991	—42,980
Long Island	Jan.	401	809,514	1,823,042	2,823,622	358,371	561,367	35,826	1,401,855	99,636	2,466,869	87.4	356,753	290,682	237,703	172,987
West Jersey & Seashore	Jan.	378	398,421	371,839	809,856	144,416	189,382	14,236	460,155	23,758	832,125	102.7	—22,269	—22,348	—33,440	—64,542
Peoria & Pekin Union	Jan.	19	19,659	3,788	150,591	10,669	19,705	900	75,916	7,411	114,601	76.1	35,900	18,990	35,942	65,209
Pere Marquette	Jan.	2,244	2,576,517	272,883	3,028,589	225,429	763,650	57 534	1,216,766	110,202	2,384,538	78.7	644,051	452,910	340,273	447,547
Pittsburgh & Shawmut	Jan.	102	135,901	4,728	142,610	17,164	48,211	1,304	46,114	8,297	121,090	84.9	21,520	20,391	32,542	43,222
Pittsburgh & West Virginia	Jan.	92	405,000	6,194	443,632	26,998	65,858	9,200	93,269	26,808	235,639	53.1	207,993	147,688	242,892	223,131
Pittsburgh, Shawmut & Northern	Jan.	198	166,592	4,047	174,168	25,418	34,044	1,584	74,365	7,096	142,507	81.8	31,661	28,682	17,949	10,781
Quincy, Omaha & Kansas City	Jan.	249	40,514	11,943	59,287	30,625	15,043	888	36,123	2,429	84,427	142.4	—25,140	—31,123	—33,539	—6,226
Reading	Jan.	1,138	6,728,595	842,581	7,913,130	865,944	1,873,075	78,703	3,203,430	202,600	6,223,988	78.7	1,689,142	1,242,912	1,352,158	944,490
Atlantic City	Jan.	161	116,536	106,504	237,871	91,901	40,908	3,514	215,947	5,012	357,434	150.3	—119,563	—153,803	—187,074	—133,624
Perkiomen	Jan.	41	95,483	4,071	102,493	7,064	6,023	106	45,645	1,169	60,049	58.6	42,444	35,354	29,509	59,221
Port Reading	Jan.	19	167,602	.....	214,712	23,688	9,571	229	84,951	1,740	120,158	19.71	94,554	79,245	—2,444	41,329
Richmond, Fredericksburg & Potomac	Jan.	117	394,298	433,298	984,886	96,360	176,549	8,522	384,971	39,423	737,858	74.9	247,028	190,076	143,332	298,949
Rutland	Jan.	413	277,121	108,941	491,350	82,978	108,554	10,613	220,477	13,627	437,431	89.0	53,919	30,480	41,478	40,770
St. Louis-San Francisco	Jan.	4,951	5,054,685	1,262,431	6,759,130	794,219	1,301,544	112,082	2,445,703	235,233	4,866,814	72.0	1,892,316	1,523,577	1,617,524	1,686,700
Ft. Worth & Rio Grande	Jan.	233	79,254	16,212	105,865	23,122	19,517	3,508	54,316	5,535	105,741	99.9	124	—3,941	—11,414	—7,456
St. Louis, San Francisco & Texas	Jan.	137	154,958	15,505	174,512	24,703	26,858	5,207	64,390	7,384	128,501	73.6	46,011	43,457	19,374	39,989
St. Louis Southwestern	Jan.	940	1,268,474	110,996	1,452,262	191,057	247,865	55,268	374,030	60,177	939,589	64.7	512,673	442,107	345,960	307,342
St. Louis Southwestern of Texas	Jan.	807	513,816	55,521	617,939	208,228	126,716	24,379	241,561	31,372	630,359	102.0	—12,420	—39,101	18,734	57,836
Seaboard Air Line	Jan.	4,226	4,122,562	1,263,745	5,856,871	853,184	887,039	192,116	2,353,236	199,835	4,575,254	78.1	1,281,617	980,958	819,627	875,840
Southern Ry.	Jan.	6,771	8,286,626	2,531,145	11,730,738	1,761,194	2,336,135	259,436	4,260,581	339,097	9,052,485	77.2	2,678,253	1,926,951	1,770,618	1,902,758
Alabama Great Southern	Jan.	314	575,847	172,120	799,269	134,397	156,067	21,826	254,105	22,656	597,031	74.7	202,238	136,117	159,903	202,685
Cinn., New Orleans & Tex. Pacific	Jan.	338	1,193,410	390,623	1,685,921	286,138	373,443	44,537	557,073	51,199	1,329,673	78.9	356,248	251,213	239,668	505,915
Georgia Southern & Florida	Jan.	401	278,938	116,297	425,835	82,746	88,740	13,562	182,667	12,051	383,557	90.1	42,278	20,741	7,938	114,553
New Orleans & Northeastern	Jan.	204	363,108	86,156	478,130	60,753	89,695	12,981	152,064	14,347	334,603	70.0	143,527	93,020	60,038	77,719
Northern Alabama	Jan.	110	106,626	8,621	117,543	22,040	4,531	2,080	37,899	2,798	69,348	59.0	48,195	42,942	16,284	2,368
Southern Pacific	Jan.	8,928	10,717,067	3.251,670	15,388,059	2,196,130	2,927,579	377,567	5,471,665	631,586	12,015,019	78.1	3,373,040	2,054,717	1,893,604	2,131,025
Atlantic Steamship Lines	Jan.	....	697,659	35,002	888,543	14,783	151,277	16,174	602,279	34,228	818,741	92.1	69,802	68,182	68,051	52,739
Galveston, Harrisb'g & S. Antonio	Jan.	2,104	1,615,959	453,862	2,253,280	586,621	533,240	63,822	904,782	111,996	2,220,688	98.6	32,592	—78,334	—154,790	211,066
Houston & Texas Central	Jan.	900	978,950	222,657	1,277,563	200,043	220,447	31,236	398,477	50,339	901,400	70.6	376,163	319,043	297,706	96,239
Houston East & West Texas	Jan.	191	215,747	35,212	265,391	30,410	44,312	4,229	79,521	10,180	168,440	63.5	96,951	82,984	60,126	32,072
Louisiana Western	Jan.	207	221,761	82,565	326,237	43,386	63,593	16,072	103,223	19,876	249,734	76.5	76,503	50,522	39,557	44,619
Morgan's L. & T. R. R. & S. S. Co.	Jan.	400	480,575	126,834	663,518	162,604	149,486	24,321	297,230	37,234	676,184	101.9	—12,666	—67,444	—97,045	—17,154
Texas & New Orleans	Jan.	569	654,946	148,681	873,712	137,806	210,190	17,290	382,533	37,852	788,885	90.3	84,827	35,767	—19,530	111,947
Spokane, Portland & Seattle	Jan.	554	414,252	97,452	568,718	64,724	90,428	9,183	201,824	23,765	395,411	69.5	173,307	94,064	88,718	90,941
Tennessee Central	Jan.	296	188,505	25,170	227,526	60,866	46,241	8,169	101,792	16,600	233,642	102.7	—6,116	—10,817	—23,948	10,180
Tenn. R. R. Ass'n. of St. L.	Jan.	55	.....	.....	1,166,779	117,220	100,501	2,645	495,133	20,959	740,066	63.4	426,713	314,360	393,545	354,493
Texas Mexican Ry.	Jan.	162	106,292	7,367	122,071	34,656	24,285	3,965	51,080	5,935	119,837	98.2	2,233	—2,767	—11,476	21,111
Toledo, Peoria & Western	Jan.	248	114,183	8,941	133,467	27,686	18,484	6,984	66,147	7,221	126,504	94.8	6,963	—537	—9,174	—16,215
Trinity & Brazos Valley	Jan.	367	251,995	10,201	269,684	63,901	40,467	5,495	131,753	12,302	249,974	92.7	19,710	12,248	—22,087	—71,047
Ulster & Delaware	Jan.	128	25,884	6,534	59,033	15,435	13,637	1,346	40,008	6,239	76,665	129.9	—17,632	—23,382	—26,676	—24,300
Union Railroad of Penna.	Jan.	45	.....	.....	717,467	72,484	197,590	176	416,294	11,484	698,025	97.3	19,442	9,442	86,385	135,605
Union Pacific	Jan.	3,714	5,554,712	1,167,147	7,381,675	608,875	1,649,440	147,773	2,377,082	316,294	5,243,507	71.0	2,138,168	1,428,546	1,320,796	1,522,333
Oregon Short Line	Jan.	2,537	1,987,286	335,950	2,500,860	273,309	448,154	43,381	843,315	119,523	1,777,327	71.1	723,533	468,016	412,913	428,529
Oregon Wash. R. R. & Nav. Co.	Jan.	2,237	1,414,298	295,149	1,881,092	252,542	380,559	63,065	852,490	114,428	1,691,942	89.9	189,150	4,785	—80,053	27,270
Los Angeles & Salt Lake	Jan.	1,208	1,439,384	369,819	1,978,937	345,073	392,005	87,763	661,293	74,188	1,639,304	82.8	339,633	206,423	113,339	—71,617
St. Joseph & Grand Island	Jan.	258	220,849	14,057	250,234	31,884	45,145	2,922	93,944	14,824	188,719	75.4	61,515	44,462	32,432	75,555
Utah	Jan.	111	193,727	36	196,028	17,839	36,122	430	37,044	6,529	97,964	50.0	98,064	84,623	73,985	42,688
Virginian	Jan.	545	2,001,214	66,934	2,178,254	202,890	352,127	14,891	425,187	33,584	1,027,966	47.2	1,150,288	985,183	1,040,465	714,803
Wabash	Jan.	2,524	4,267,941	682,163	5,315,009	571,602	1,005,654	156,486	2,321,664	171,877	4,233,123	79.6	1,081,886	819,352	544,721	690,219
Western Maryland	Jan.	804	1,930,350	47,033	2,040,615	262,955	438,657	38,314	634,536	47,219	1,422,086	69.7	618,529	518,529	482,275	448,225
Western Pacific	Jan.	1,042	858,046	85,189	993,557	144,243	211,431	39,373	394,555	49,958	837,738	84.3	155,819	32,026	123,194	267,250
Wheeling & Lake Erie	Jan.	511	1,358,966	36,957	1,470,813	162,150	386,487	32,490	497,834	39,348	1,120,199	76.2	350,614	223,614	226,007	257,727

News of the Week

(*Continued from page 909*)

installation of apparatus is completed without waiting for the concrete to set.

Ezra Brainerd, Jr., New Interstate Commerce Commissioner

Ezra Brainerd, Jr., who was appointed a member of the Interstate Commerce Commission on February 16 by President Coolidge, for a term of seven years from January 1, 1927, succeeding Frederick I. Cox, whose term expired on December 31, has arrived in Washington and entered upon the duties of the office. His appointment was confirmed by the Senate on February 17 without opposition. Mr. Brainerd was born in Middlebury, Vt., in 1878, the son of Ezra Brainerd, who for more than

Ezra Brainerd, Jr.

60 years was on the faculty of Middlebury College, serving successively as teacher, professor and president. He was educated at Middlebury High School, Worcester Academy, Worcester, Mass.; Colgate University Preparatory School, Hamilton, N. Y., and the University of Michigan, from which he was graduated in law in the class of 1904. He was admitted to the bar by the Supreme Court of Michigan on June 21, 1904, and by the Supreme Court of Vermont, October 28, 1904. He then went to Indian Territory, now Oklahoma, and has been active in the practice of law at Muskogee in the years since. He was president of the board of trustees of the Presbyterian Church and vice-president and general attorney of the First National Bank of Muskogee. Mr. Brainerd contributed an article to the *Railway Age* of April 26, 1901, on the Expansion of the Rutland Railroad System. It was not signed, but the map accompanying the article bears his signature.

A "Department" That Takes in All Employees

The Central of Georgia believes that the public is fairminded when correctly informed and the president issues monthly statements about transportation matters, in the shape of paid advertisements in newspapers. Constructive criticism and suggestions are invited and this invitation is extended in all sincerity, and the management is always pleased to discuss in person or by correspondence any matter that interests its patrons and friends. Each advertisement develops a considerable volume of correspondence, and every criticism is carefully considered and a prompt reply made.

With this introduction President J. J. Pelley addresses the public as follows (in part): The road does not maintain a separate department to handle its relations with the public, nor has it an officer known as "director of public relations" or by a similar title. The president directs this work, as he does other major activities of the railway. All departments and all officers of the company are interested in furnishing satisfactory service to the public and in explaining the whys and wherefores of the business. The "open door" policy is maintained at the company's headquarters at Savannah and at its other offices. The shipping and traveling public and the employees may see any officer of the company about any matter that concerns them, with assurance of a courteous hearing.

Visiting the various cities and towns in their territory so they may know both patrons and employees, is considered as an essential part of the railroad officer's duty. The Central of Georgia desires to do everything in its power to render good service. The officers and employees are at all times, not only willing but eager to take the public into their confidence and to give the facts about the railway. The officers are ready to address public gatherings.

Canadian Branch Line Program

Following is the detailed branch-line program for the Canadian National Railways as shown in the legislation of which notice has been given in the Canadian Parliament by Charles A. Dunning, minister of railways and canals:

1. (*a*) From a point about three miles west of St. Felicien on the St. Felicien Branch of the James' Bay and Eastern Railway to a point on the Mistassini River, in the Province of Quebec. Estimated mileage 27.5 miles; average expenditure per mile $53,589; estimated cost $1,463,000.

(*b*) Section (1). From a point near Hebertville on the Quebec and Lake St. John Railway to Ile d'Alma on the Saguenay River in the Province of Quebec. Estimated mileage 9.5 miles; average expenditure per mile $56,526; estimated cost $537,000.

Section (2). From a point on Ile d'Alma on the Saguenay River to Savanne on the Peribonka River in the Province of Quebec. Estimated mileage 25.0; average expenditure per mile $63,800; estimated cost $1,595,000.

Total (*b*) Mileage 34.5; average expenditure per mile $61,797; estimated cost $2,132,000.

The construction of these lines shall be subject to the following conditions:

In the event of running rights being secured between near Hebertville and Ile d'Alma over the line of the Alma and Jonquiere Railway, that part of the line authorized by this Act between near Hebertville and Ile d'Alma shall not be constructed by the company, nor shall securities be issued or guaranteed in respect thereof.

2. From a point near Grand Mere on the Canadian Northern Quebec Railway in the Province of Quebec. Estimated mileage 7.9; average expenditure per mile $213,038; estimated cost $1,683,000.

3. From a point near Pilkington on the Canadian National Railway to a point near Niagara Junction on the Canadian National Railway in the Province of Ontario. Estimated mileage 16.7; average expenditure per mile $69,700; estimated cost $1,164,000.

4. From a point near Weyburn on the Grand Trunk Pacific Saskatchewan Railway to a point near Radville on the Canadian Northern Railway, in the Province of Saskatchewan. Estimated mileage 22.7; average expenditure per mile $25,110; estimated cost $570,000.

5. From a point near Willow Brook on the Canadian Northern Railway to a point in Township 27, Range 9, West of the second Meridian, in the Province of Saskatchewan. Estimated mileage 22.0; average expenditure per mile $28,000; estimated cost $616,000.

6. From a point near Sturgis on Canadian Northern Railway to a point on the Canadian Northern Railway between Crooked River and Mistatim, in the Province of Saskatchewan. Estimated mileage 100.0; average expenditure per mile $33,950; estimated cost $3,395,000.

7. From a point between Crooked River and Mistatim on the Canadian Northern Railway to a point in Township 48, Ranges 11 or 12, West of second Meridian, in the Province of Saskatchewan. Estimated mileage 19.0; average expenditure per mile $30,000; estimated cost $570,000.

8. From a point on the Canadian Northern Railway between Shell Brook and Kilwinning to a point in Township 50, Ranges 9 or 10, West of the third Meridian, in the Province of Saskatchewan. Estimated mileage 37.0; average expenditure per mile $32,432; estimated cost $1,200,000.

9. From a point at about Mile 67 on the Turtleford Southeasterly Branch of the Canadian National Railway to a point on the Canadian Northern between Hafford and Richard in the Province of Saskatchewan. Estimated mileage 35.6; average expenditure per mile $31,742; estimated cost $1,130,000.

10. From a point near Kindersley on the Canadian Northern Railway to a point near Glidden on the Canadian Northern Railway in the Province of Saskatchewan. Estimated mileage 18.0; average expenditure per mile $35,555; estimated cost $640,000.

11. From a point near Spruce Lake on the Canadian Northern Railway to a point in Township 53, Range 25, West of the 3rd Meridian, in the Province of Saskatchewan. Estimated mileage 29.5; average expenditure per mile $33,559; estimated cost $990,000.

12. From a point near Hudson Bay Junction on the Canadian Northern Railway to a point in Townships 39 or 40, Range 5, West of the second Meridian, in the Province of Saskatchewan. Estimated mileage 32.0; average expenditure per mile $34,000; estimated cost $1,088,000.

13. From a point near Elk Point on the Canadian National Railway to a point in Township 55, Ranges 3 or 4, West of the fourth Meridian, in the Province of Alberta. Estimated mileage 19.0; average expenditure per mile $39,210; estimated cost $745,000.

14. From a point near Ashmont on the Canadian Northern Western Railway to a point at or near Bonnyville, in the Province of Alberta. Estimated mileage 38.0; average expenditure per mile $37,237; estimated cost $1,415,000.

Traffic

The Women's Traffic Club of Los Angeles held its regular meeting on March 2. The speaker was A. Lester Best.

The Southern Pacific has opened a new ticket office in New York, 531 Fifth avenue, in charge of W. J. Hanrahan.

The Interstate Commerce Commission has called a joint conference of the carriers and of furniture interests to be held at Washington on April 6 for the purpose of considering a plan of procedure for the commission's investigation of freight rates on furniture in connection with its rate structure investigation, No. 17,000, Part 5.

In a decision made public on March 9 on a complaint filed by the Central of New Jersey, the Interstate Commerce Commission held that the re-establishment of joint rates on traffic from and to points on the Central and its connections west of Allentown, Reading and Harrisburg, Pa., and west of and including Hagerstown, Md., via New York Harbor to and from points on the New York, New Haven & Hartford and the Central New England, is not necessary or desirable in the public interest. However, the commission held that the failure of the New Haven and Central of New England to accord to the Central of New Jersey joint rates via New York Harbor on traffic from and to points in the territory described, while contemporaneously according joint rates via New York Harbor on such traffic to the Lehigh Valley and Pennsylvania, is discriminatory. Divisions of joint rates on anthracite coal from points on the lines of complainant via Maybrook, N. Y., and points on the New Haven and Central New England were found not in violation of section 208(b) of the transportation act, but the report says that the reasonableness of the divisions on this traffic is in issue in the New England divisions case and no finding is made with respect to it. Commissioners Hall, Aitchison, Woodlock and Taylor dissented.

Northern Pacific Agricultural Department

The Northern Pacific has consolidated its agricultural and immigration department in order to follow up more intensively the work already started among new settlers on farms in the northwestern states through which the railroad operates. It is believed that under this plan more effective co-operation with agricultural colleges and other agencies now engaged in agricultural development work in the northwest can be accomplished. Under the new arrangement the railroad will have a qualified agricultural development agent in each state, while in the larger states two or more men will be employed. These men will not advocate any particular methods or policies but will endeavor to help the individual farmer in his own effort to find the best methods to make his work profitable. John W. Haw, agricultural development agent, has been promoted to director of the department of agricultural development.

Change in Tickets

The Delaware & Hudson announces that 54-ride commutation tickets between Albany, Troy and certain stations, now valid for 60 days, will henceforth be issued only for one calendar month. After the 14th of the month, part tickets will be issued for use during the balance of the month. On certain tickets of this class, the price is to be slightly reduced. Ten-ride strip tickets will hereafter be good for any person or persons, instead of being non-transferable, as at present. Fifty-ride family tickets, now limited to be used within four months, are to be made good for one year. The 50-ride tickets are not valid for trips between Albany and Troy and the minimum price for a ticket is $3.85.

Oregon Roads Reduce Rates on Farm Products

Decreased local and joint freight rates on intrastate shipments of farm products were filed by the railroads operating in Oregon on March 1, in conformity with the orders of the Public Service Commission issued on January 19, 1924, and August 29, 1924. The commission requires the roads to refund charges in excess of the reduced rates that have been collected since the dates of the orders. When the order was issued in 1924, the roads brought suit in the lower court to set it aside and later appealed to the Supreme Court. The latter, a few weeks ago, affirmed the decree of the lower court and held the rates fixed by the Public Service Commission to be just and reasonable.

Hearings on Cotton Rates

The Interstate Commerce Commission has announced a series of hearings on cotton rates, in connection with several formal complaints that have been filed and its general rate structure investigation, No. 17,000, Part 3, to be held before Commissioner Woodlock and Examiner G. H. Mattingly, for the purpose of receiving evidence on behalf of shippers. Upon the completion of the shippers' evidence a short recess will be taken, after which carriers will be heard. It is not the purpose at this series of hearings to go into all the matters comprehended by the broad scope of No. 17,000, but the evidence will be confined as nearly as may be to such as will enable the commission to dispose of the issues raised by the formal complaint cases as promptly as possible.

The schedule of hearings is as follows: Little Rock, Ark., April 20; Oklahoma City, Okla., April 25; Dallas, Tex., April 29; Shreveport, La., May 6; Galveston, Tex., May 9; New Orleans, La., May 11; Memphis, Tenn., May 16; Biloxi, Miss., May 18; Montgomery, Ala., May 23; Atlanta, Ga., May 27; Columbia, S. C., June 1; Raleigh, N. C., June 3; and Los Angeles, Calif., June 20.

Foreign

Electrification Plans in Spain

The Northern Railway of Spain has placed an order for 22 electric locomotives. The electrical equipment is to be constructed in Switzerland and the mechanical parts in Bilbao by the Euskalduna Company. The locomotives are to be employed on the electrified lines from Barcelona to Manresa and to San Juan de las Abadesas, in the Pyrenees.

All main lines in Spain, according to plans, are to be double-tracked and big schemes of electrification are being worked out, all the power to be obtained from water. The line from Cerbère to Barcelona is to be electrified, as well as the coast line from Barcelona to Empalme. Another project includes the laying of a third rail from the frontier at Puigcerda, so as to enable trains of standard gage to go from France direct to the capital of Catalonia.

Italy Plans Larger Locomotive, Faster Freight Service

Experts of the Italian State Railways are reported to be examining plans for a new type of passenger locomotive, able to develop 2,000 h.p. at driving wheel rims and capable of attaining a speed of 120 kilometers (approximately 75 miles) an hour, states a report to the Department of Commerce from Assistant Commercial Attache A. A. Osborne, Rome.

For express passenger trains on long non-stop runs, there has been planned a new type of tender with holding capacity of 32 cubic meters (8,100 gal.) of water and 7 metric tons (7.7 short tons) of coal. These new tenders are to be used because the State Railways' experts have lately made tests which satisfied them that economy is to be achieved in having freight trains run considerable distances at a speed as high as 40 to 45 kilometers (from about 24 to 28 miles) per hour, without stopping for frequent switching operations at small intermediate stations.

Australian Railway Deficit Increases

The report of the commissioner of Federal Railways in Australia for the year 1925-26 indicates that while there was an excess of operating expenses over earnings amounting to £108,929, there was an interest bill of £308,429, making a total deficit of £417,358. In 1924-25 the operating loss was £87,958 plus the interest bill of £272,611, or a total deficit of £360,569. It was reported that earnings amounted to 11s. 3d. per train mile, and operating expenses 14s. 3d., or about $2.84 and $3.47 respectively.

Returns from the Victorian State Railways continue to show increases in revenue. Since the middle of September, 1926, higher freight rates have been charged and it is expected that the increased revenue resulting from these together with heavier shipments of wheat

due to a larger crop, will reach a total of £800,000 for 1926-27. The Premier of New South Wales has indicated that he will include in 1926-27 budget a provision for increasing freight rates in New South Wales, over the Federal Territory Railway, on both farm product and coal. It is not expected that passenger fares will be increased. It is estimated that under the higher rates farm produce will return an increased revenue of £300,000 and coal, £250,000.

Cino-Japanese Transportation Agreement

An agreement is reported to have been signed by the administration of the Chinese Eastern Railway with the Japanese Yamashita Kisen Kaisha Steamship Company, covering ocean transportation from Vladivostok to ports of Japan, China, India and Europe, state advices from Consul G. C. Hansen, Harbin, Manchuria, made public by the Department of Commerce. According to this contract the railway is stated to have granted the steamship company the exclusive right to carry all ocean freight from Vladivostok which emanates from the Chinese Eastern Railway.

The freight turned over to the steamship company must pass through the commercial agencies of the railway, under the provisions of the agreement. At points where there are no such agencies the Yamashita Company shall, on its own part, do everything to facilitate transport. From the moment the contract goes into effect the Yamashita Kisen Kaisha will inaugurate regular steamer service between Vladivostok and Shanghai, and will arrange sailings not less than three times monthly.

The Chinese Eastern Railway guarantees that Yamashita steamers arriving at the port of Vladivostok shall receive full cargoes of ready freight. The Yamashita also has the right to carry freight not emanating from the Chinese Eastern Railway. The steamship company is given the right to control the movement of freight at intermediate stations through its agents. The railway obligates itself to give due notice to the steamship company in case any of its freight is turned over to other firms for ocean transportation. The Yamashita Company, on the other hand, shall notify the Chinese Eastern Railway two weeks in advance of the proposed arrival of its steamers at the port of Vladivostok.

Miscellaneous

The Department of Commerce has received the following reports from its agents in various parts of the world:

A bill amending the Canadian Railway Act of 1919 was recently introduced in the House of Commons, according to a report to the department of commerce from Trade Commissioner L. W. Meeking, Ottawa. This measure seeks to establish a national coal policy for Canada by placing the transportation of coal on a preferential basis with grain and flour in order to enable the Maritime Provinces and Alberta to increase their trade in central Canada.

Equipment and Supplies

Locomotives

THE TEXAS & PACIFIC is inquiring for 15, 2-8-4 type locomotives and 5 eight-wheel switching locomotives.

THE CHICAGO & NORTHWESTERN has ordered 12 2-8-4 type locomotives and 8 eight-wheel switching locomotives from the American Locomotive Company. The 2-8-4 type locomotives will have 27-in. by 32-in. cylinders and a total weight in working order of 395,000 lb., and the eight-wheel switching locomotives will have 25-in. by 28-in. cylinders and a total weight in working order of 224,000 lb. Inquiry for this equipment was reported in the *Railway Age* of February 19.

Freight Cars

THE MISSOURI PACIFIC is expected to enter the market for 300 box cars.

THE STANDARD OIL COMPANY OF NEW JERSEY is inquiring for 10 box cars.

THE NEW YORK, NEW HAVEN & HARTFORD has placed an order for 20 dump cars.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE is reported to be inquiring for 84 caboose car underframes.

THE ATCHISON, TOPEKA & SANTA FE has ordered 50 ballast cars from the Pressed Steel Car Company.

THE SOUTHERN PACIFIC has ordered 1,000 general service cars from the Standard Steel Car Company and 200 tank cars from the General American Tank Car Corporation. Inquiry for this equipment was reported in the *Railway Age* of February 5.

Passenger Cars

THE CHICAGO, BURLINGTON & QUINCY has ordered 36 suburban car underframes from the Bettendorf Company.

THE BALTIMORE & OHIO has ordered 50 steel coaches from the Pullman Car & Manufacturing Corporation and 15 baggage cars and 15 combination passenger and baggage cars from the Standard Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of January 8.

Machinery and Tools

THE MISSOURI PACIFIC is inquiring for 31 machine tools, including two two-spindle rod boring machines, one No. 5 plain milling machine, one 10-in. by 36-in. Universal grinder, one 24-in. engine lathe, one 16-in. splitting shear, one 36-in. gap spot welding machine, and one No. 1 angle iron bending roll, all of which are for use at Sedalia, Mo., one 15-ton electric traveling crane, one squaring shear, one 5-ft. radial drill, one 48-in. vertical drill, one No. 5 plain milling machine, one 36-in. draw cut shaper, one 13-in. Universal punch and shear, one 42-in. engine lathe with 9 ft. center, one 20-in. slotter and one Fordson tractor with boom, all of which are for use at North Little Rock, Ark., one geometric chaser grinder, one sensitive drill, one 10-in. by 36-in. Universal grinder, one 48-in. vertical drill, one Fordson tractor with boom, one 36-in. draw shaper, all of which are for use at Kansas City, Mo., one 20-in. engine lathe, one 42-in. vertical drill press and one Fordson tractor, all of which are for use at Osawatomie, Kan., one 20-in. engine lathe for use at Falls City, Neb., one double grinder and one 32-in. crank shaper for use at Omaha, Neb., one 90-in. driving wheel lathe for use at St. Louis, Mo., and one distributing valve test rack for use at Alexandria, La.

Signaling

THE LEHIGH VALLEY has ordered from the General Railway Signal Company an interlocking for Treichler Junction, Pa.; 24 levers, style "A."

THE CHICAGO & ALTON has ordered from the General Railway Signal Company material for automatic block signals to be installed between Joliet, Ill., and Mazonia, 25 miles.

THE ATLANTIC COAST LINE has ordered from the Union Switch & Signal Company an electro-mechanical interlocking for Trilby, Fla.; 12 working mechanical levers and three electric.

THE DELAWARE, LACKAWANNA & WESTERN has ordered from the Union Switch & Signal Company for installation between Elmira, N. Y., and Binghamton, 93 color-light signals, style R-2.

THE PACIFIC ELECTRIC has ordered from the Union Switch & Signal Company material for automatic train stops to be installed in its subway between Hollywood, Cal., and Glendale; about 200 electric cars will be equipped.

THE NORFOLK & WESTERN has ordered from the Union Switch & Signal Company material for the installation of automatic block signals on its line between Norton, Va., and Bluefield, W. Va., 103 miles, single track; 282 position-light signals, 1038 alternating current relays and other apparatus. An order has also been given to the Union Switch & Signal Company for an interlocking at Walnut Cove, N. C.; 10 working mechanical levers and 8 electric.

THE NORFOLK & WESTERN spent on its dining cars last year $77,081 more than it took in, the average receipt per meal being $1.17 and the average cost $1.48 making a deficit of 31 cents a meal. This, however, is not considered extraordinary, the railway being partly repaid by the good will and comfort of its patrons.

Supply Trade

L. C. Kerner, sales manager of the **Centrifix Corporation**, Cleveland, Ohio, has been elected vice-president.

The Magnetic Signal Company, Los Angeles, Calif., has moved its plant and offices to 3355 East Slauson avenue.

The Vapor Car Heating Company, Chicago, will move its New York office on or before May 1 to the Park Murray building.

Albert J. Davis, president of the Merchants' & Manufacturers' Association, St. Louis, Mo., has been elected vice-president of the Scullin Steel Company, St. Louis, Mo., succeeding George L. Davis, resigned.

E. J. Brooks & Co., Inc., New York City, has appointed **Curry & Co.**, Chicago, Ill., representatives for the sale of car seals in St. Louis territory. This territory is in addition to the Chicago territory that they have been handling for several months.

O. J. Neslage, representative of the **Sullivan Machinery Company**, Chicago, with headquarters at Joplin, Mo., has been appointed local manager, with headquarters at Mexico City, Mexico, to succeed A. W. Oakes, who has been transferred to the United States. **C. W. Miller** has been appointed special representative at Havana, Cuba.

Tom M. Neibling, formerly research engineer of the Georgia State Highway Department, has been appointed district engineer of the **Armco Culvert Manufacturers' Association**, in charge of a newly opened office at East Point, Ga., to handle work in Alabama, Florida, Georgia, Louisiana, Mississippi, Tennessee, North Carolina and South Carolina.

B. M. Slicting has been appointed sales promotion manager of the **Trico Fuse Manufacturing Company**, with headquarters at Milwaukee, Wis., and will be in charge of sales promotion work. **J. E. Eldredge** has been appointed sales representative for Connecticut and the western part of Massachusetts, with headquarters at South Windsor, Conn. **Arthur E. Bacon** has been appointed sales representative for Colorado, New Mexico, Utah, and Wyoming, with headquarters at Denver, Colo.

G. S. Turner, who has been elected president of the T Z Railway Equipment Company, Lytton building, Chicago, recently organized by Mr. Turner, F. G. Zimmerman and F. J. Kearney, as was reported in the *Railway Age* of February 19, was formerly in the mechanical department of the Southern. He was there until 1909 when he entered the railroad sales deparement of the Crane Company, Chicago, as a salesman and mechanical expert. On September 1, 1913, he resigned to become vice-president of Harry Vissering & Company (now known as the Viloco Railway Equipment Company) and the Charles R. Long, Jr., Company. Later he became vice-president of the Okadee

G. S. Turner

Company and on February 21, 1925, he was elected president and director of the Viloco Railway Equipment Company. When he resigned to organize the T Z Railway Equipment Company he was president and director of the Viloco Railway Equipment Com-

Fred G. Zimmerman

pany, vice-president and director of the Okadee Company, the Charles R. Long, Jr., Company, and the Viloco Machine Company.

Mr. Zimmerman entered business in September, 1908, in the railroad sales department of the Crane Company. In May, 1916, he entered the employ of Harry Vissering & Company (Viloco Railway Equipment Company) and during his connection with this company he also became associated with the Okadee Company, the Viloco Machine Company, and the Charles R. Long, Jr., Company. At the time of his resignation in January he was vice-president, director and secretary for the Viloco Railway Equipment Company and the Okadee Company, director and secretary-treasurer of the Viloco Machine Company, and also assistant secretary of the Charles R. Long, Jr., Company.

Mr. Kearney entered railway service as a machinist apprentice on the Duluth, South Shore & Atlantic at Marquette, Mich., and in March, 1904, was appointed a machinist at Proctor, Minn. In 1907 he was appointed assistant roundhouse foreman of the Great Northern, with headquarters at Superior, Wis., and in October, 1909, was appointed general foreman, which position he held until 1911 when he was made assistant master mechanic. In 1914 he was appointed roundhouse foreman of engines and in 1916 resigned to become

Frank J. Kearney

general foreman on the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn. He held the latter position until January, 1925, when he entered the employ of Harry Vissering & Company (Viloco Railway Equipment Company) as a mechanical expert, which position he held until his resignation.

C. V. Lally has been appointed general manager of sales of the **Pittsburgh Steel Products Company**, Pittsburgh, Pa. **Richard R. Harris**, who has been general manager of sales of the Pittsburgh Steel Company and subsidiary companies, has resigned. Mr. Lally has been manager of the Detroit office of the National Tube Company and has been associated with that company in its sales organization for the past seventeen years. The Pittsburgh Steel Products Company manufactures seamless steel tubes including boiler tubes. In 1925, its capital stock was acquired by the Pittsburgh Steel Company and it is

now operated as a subsidiary of that company.

Chicago Railway Equipment Company

The annual report of the Chicago Railway Equipment Company for 1926 shows a surplus or undivided profit of $948,659 as compared with $1,249,606 in 1925, after the payment in each year of dividends of $209,774 on the 7 per cent preferred stock and $179,808 on the common stock. Additions to the capital assets to the amount of $31,722 were provided out of the year's earnings. The total number of shareholders is 951, an increase of 18 over last year, and of this number 547 are women.

Safety Car Heating & Lighting Company Acquires E. S. B. Lighting Equipment

An arrangement has been made whereby the axle generator business of the Electric Storage Battery Company has been acquired by the Safety Car Heating & Lighting Company, and hereafter the battery requirements of the Safety Car Heating & Lighting Company will be furnished by the Electric Storage Battery Company. The Safety Car Heating & Lighting Company will manufacture and furnish to the railroads when required E.S.B. axle equipments and replacement parts. It is now possible for the Safety Car Heating & Lighting Company to meet the car lighting demands of the railroads not only with its standard Safety equipment, but also to furnish the USL and ESB types. As a result of this arrangement the users of car lighting equipment will be able to avail themselves of the enlarged service which will result from the co-operation of these two organizations.

Obituary

Hampton Wallace Johnston, service engineer of the Franklin Railway Supply Company, Inc., New York, died on February 22, at Homestead, Fla., at the age of 43, after an illness of several months. Mr. Johnston entered railway service as a special apprentice with the Lake Shore & Michigan Southern, with which road he remained for six years. He then went to the Delaware, Lackawanna & Western as assistant general foreman at the time of starting the new shops at Scranton, Pa. Later he was appointed supervisor of tools of all the shops of that system. He also served as supervisor of tools of the Baltimore & Ohio, reporting to the superintendent of motive power. His work covered the standardization of boiler threads and of methods and tools for the maintenance of boiler flues, arches, superheaters; and as chief boiler inspector he conducted the examinations of all boiler inspectors. Just previous to his joining the service staff of the Franklin Railway Supply Company, Inc., in June, 1923, he was factory manager for the Wood Turret Machine Company, Brazil, Ind.

Construction

BALTIMORE & OHIO.—A contract has been let to the Vang Construction Company, of Cumberland, Md., for the grading and masonry on a new viaduct from Germantown to Barnesville, Md., which is seven and one-half miles long. Another contract has been awarded to the Empire Construction Company, of Baltimore, Md., for additional track work on this project. This work is estimated at a cost of $1,650,000.

BANGOR & AROOSTOOK.—Bids will be requested in a few days for the replacement of an old bridge with one of E-60 loading, and a span of 163 feet at Derby, Me., which is estimated at a cost of $36,000.

CENTRAL OF GEORGIA.—A contract has been awarded to the Virginia Bridge & Iron Company of Roanoke, Va., for the construction of a viaduct on Bay Street at an estimated cost of $59,000.

CENTRAL OF GEORGIA.—A contract has been awarded to The U. G. I. Contracting Company, Healey Building, Atlanta, Ga., for the construction of a reinforced concrete and steel viaduct at Savannah, Ga., which it is estimated will cost around $480,000.

CHICAGO, BURLINGTON & QUINCY.—Bids will be received on March 17 for the construction of a one-story cement block pattern storage building, 80 ft. by 80 ft., at West Burlington, Iowa.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—Bids will be received on March 18 for the construction of a 76-ft. by 411-ft. brick addition to the machine shop at Lafayette, Ind.

ERIE.—This road has let a contract to Charles Shutrump & Sons Co., for the construction of a five-story freight and storage terminal, 422 ft. by 87 ft. The building will be of reinforced concrete.

FORDYCE & PRINCETON.—This road has been authorized to build an extension of its line of railroad from a point on its existing line, designated as engineer's station 175 x 90, in a general northwesterly direction to a point in the southeast quarter of the southeast quarter of section 35, township 9 south, range 13 west, a distance of approximately 5 miles, all in Dallas County, Ark.

ILLINOIS CENTRAL.—A contract has been awarded to the Ellington Miller Construction Company for rebuilding a brick, reinforced concrete and limestone passenger station at Jackson, Miss., including the remodeling of the express and baggage depot, a new passenger depot, and new waiting rooms. The entire cost will be approximately $400,000.

LOUISVILLE & NASHVILLE.—A contract has been awarded to McClintic-Marshall Co., of Pittsburgh, Pa., for bridge work on the Tensas River bridge. Four thousand tons of structural steel will be involved in this work.

MANISTEE & REPTON.—The Interstate Commerce Commission has authorized this road to construct a line of railroad extending from a connection with its main line at a point about one-half mile southeast of Monroeville in a general northeasterly direction to Monroeton, a distance of approximately three miles; and also has issued permission for the Manistee & Repton to abandon a line of railroad extending from Dottelle in a general easterly direction from Monroe Junction, a distance of about four miles, all in Monroe County, Alabama. The estimated cost of construction of the new line, not including the 80 pounds of rail to be used, which will be rented from the Louisville & Nashville on the basis of six per cent annually on a valuation of $25.00 a ton, is about $9,760.

MICHIGAN CENTRAL.—A contract for a 50-ft. by 600-ft. two-story brick and concrete fruit auction building at Detroit, Mich., estimated to cost $300,000, has been awarded to the Ellington Miller Construction Company.

NEW YORK CENTRAL.—A contract has been awarded to the Erie City Iron Works of Erie, Pa., for the manufacture, delivery and erection of water tube boilers in power house at Central Station at Buffalo, N. Y. A contract has also been awarded to the Jobson-Gifford Company, of New York City, for filling of temporary tracks north of Dyckman Street at New York City. Another contract has been awarded to the Worthington Pump & Machine Corp. of New York City, for the manufacture, delivery and erection of a surface condenser in the Power Station at Yonkers, N. Y.

NEW YORK, NEW HAVEN & HARTFORD.—A contract has been awarded to the Lathrop & Shea Co., New Haven, Conn., for the construction of a freight yard, and freight house and driveway at Harrison, N. Y., at an estimated cost of $70,000.

NORFOLK & WESTERN.—This road has awarded a contract to J. P. Pettyjohn & Co., of Lynchburg, Va., for an extension to Pier "S," for constructing a warehouse for perishables, and an office building at Lambert Point, Va. It is estimated that this work will cost around $50,000.

PENNSYLVANIA.—This road has awarded a contract to Sinclair & Grigg of Philadelphia, Pa., for the construction of buildings, platforms and shelters at South Philadelphia, and a perishable products terminal at Baudales Street and Oregon Avenue, Philadelphia, which, it is estimated, will cost about $500,000.

PORT ANGELES WESTERN.—This company has applied to the Interstate Commerce Commission for a certificate authorizing an extension of 20 miles from Tyee to Forks, Wash.

SOUTHERN PACIFIC.—H. M. Lull, executive vice-president, has announced the proposed construction of a passenger station at Houston, Tex., actual work on the project to start during 1928.

Railway Finance

AKRON, CANTON & YOUNGSTOWN.—*1926 Earnings.*—Consolidated income statement for this company and the Northern Ohio for 1926 shows net income of $200,656 as compared with $420,462 in 1925.

ALABAMA GREAT SOUTHERN.—*1926 Earnings.*—A preliminary statement of 1926 earnings shows net income after interest and other fixed charges of $2,772,462, equivalent to $12.36 a share on the outstanding 224,207 shares of combined common and preferred stocks. This compares with $2,998,368 or $13.37 a share in 1925.

ASHLAND.—*Acquisition of Line.*—The Interstate Commerce Commission has issued a certificate authorizing this company to acquire and operate a line extending from a connection with the Atlanta, Birmingham & Coast at Pyriton, Ala., to Ashland, 7.1 miles. This line was formerly operated by the Alabama Northern which was sold at a receiver's sale on October 5, 1925. The new company has been organized in the interest of the people of Ashland, the only town served by the railroad.

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Perris, Calif., to Elsinore Junction, 10.29 miles, saying that the business now handled over the line will be moved over a more direct line.

ATLANTIC COAST LINE.—*Lease.*—This company has applied to the Interstate Commerce Commission for authority to operate under lease the Washington & Vandemere, which it already controls by stock ownership.

BALTIMORE & OHIO.—*Control of C. I. & W.*—Examiner Thomas F. Sullivan has submitted a proposed report to the Interstate Commerce Commission recommending that acquisition of control by the Baltimore & Ohio of the Cincinnati, Indianapolis & Western under an operating agreement be approved and authorized. The Baltimore & Ohio already controls the company by ownership of 96 per cent of its stock and has stated that the operation of the line by it will result in substantial economies. The Chicago, Attica & Southern intervened and presented evidence to show that it ought to be taken over by the Baltimore & Ohio, but the examiner reports that the Attica line connects with 13 carriers and that as the others were not parties to this proceeding no order affecting it should be made.

BUFFALO, ROCHESTER & PITTSBURGH.—*Annual Report.*—Net income shown in the annual report published in these columns on March 5, of $1,328,295 was equivalent after allowance for preferred dividends to $9.22 a share on the common stock. The 1925 net income of $661,596 equalled $2.87 a share.

Explanation of Refusal to Extend Delaware & Hudson Option.—The telegram sent to the Interstate Commerce Commission by W. T. Noonan, president of the Buffalo, Rochester & Pittsburgh, announcing that the directors of the latter property have declined to extend further the option given to the Delaware & Hudson for the lease of the property read as follows:

"At the direction of the board I wish to place before you briefly some of the considerations which resulted in this decision. The proposed lease in final form was approved by our directors in June, 1925, and by our stockholders in September, 1925. Before our board approved the lease there was an agreement between the two companies whereby we were given the right to terminate our commitment if the proposed lease was not approved by the commission by December 31, 1926. Our directors insisted upon this right of termination so that the company would not for too long a period be in a position of uncertainty as regards the lease. Our directors wanted to fix a shorter time and consented only reluctantly to fixing December 31, 1926, as the date by which the lease must be approved.

"The application to the commission was filed July 15, 1926, ten months after obtaining the requisite approval of stockholders, but our company is not responsible for this delay. On July 1, 1926, our company gave formal notice to the Delaware & Hudson that if Interstate Commerce Commission approval were not secured by December 31, all obligation on our part to make the lease would cease on that date. This notice was in accordance with the previous agreement.

"On December 31, 1926, Commissioner Meyer by telegraph inquired whether the period within which approval of the lease might be secured could be extended for 60 days in order to permit orderly consideration of record, and our directors with great reluctance granted this extension. This prolonged the period of uncertainty to March 1. When in the latter part of February the D. & H. asked us to stipulate additional facts regarding trackage rights into the record, we advised them that our doing this must not be construed as in any way obligating our company to grant any further extension. This I reported to you in my telegram of February 25.

"Our board has read your two telegrams as amounting to a request that the time for securing approval of the lease be extended for 90 days from March 1, although your second telegram read by itself requests an indefinite extension for such period as will permit the commission to give mature consideration to the case. The embarrassment to our company as a result of the uncertainty concerning this lease will be understood by the commission. For more than a year and a half this condition of uncertainty has existed, and during this long period important questions have had to remain undecided because the determination of these questions was dependent on whether the property was to be operated independently or leased to the Delaware & Hudson.

"Questions concerning making improvements, purchasing additional rolling stock, and renewing expiring traffic and trackage and other contracts, have accumulated in this interval and are pressing for decision. In the immediate future other like questions will require action. This uncertainty affects also our personnel who are naturally disturbed as to the future.

"During the past 18 months our directors and officers have experienced much embarrassment in the operation of the property and the conduct of the company's business, and they have felt for a long time that this situation of uncertainty was highly detrimental to the interest of the stockholders and the communities which the property serves.

"In view of the request contained in your two telegrams our directors have again reviewed the situation and have given your request the most careful consideration. I am asked to say to you that it is with the greatest regret that the board has been forced to the conclusion that the period of uncertainty would not be further prolonged and therefore that the company must now exercise its option to terminate its obligations under the proposed lease to the Delaware & Hudson."

BURLINGTON, MUSCATINE & NORTHWESTERN.—*Acquisition of Line.*—The Interstate Commerce Commission has authorized this company to operate a line 5.5 miles long within and adjacent to Muscatine, Iowa. This mileage was a part of the former Muscatine, Burlington & Southern which extended from Muscatine, Iowa, to Burlington, 53.8 miles, and which was authorized by the Interstate Commerce Commission to be abandoned. The new company will operate a switching service that is at present being operated by the Rock Island so that the industries might be served while the new company was without authority to operate its property. The company, however, holds by perpetual franchise from the city of Muscatine valuable terminals on the Mississippi river front subject to the condition that the lines must not be abandoned and that the terminals must not be sold directly or indirectly to the Rock Island.

LEWISTON & YOUNGSTOWN FRONTIER.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon a portion of its line in Youngstown and Porter, N. Y., 7.2 miles.

CHESAPEAKE & OHIO.—*Minority Stockholders Allowed to Intervene in Acquisition Proceedings.*—The Interstate Commerce Commission on March 3 issued orders allowing a committee representing minority stockholders of the Chesapeake & Ohio to intervene and be treated as parties to the proceedings on the applications of the Chesapeake & Ohio, for authority to acquire control of the Erie and Pere Marquette and to issue $59,502,400 of additional common stock. The committee consists of George S. Kemp, Granville G. Valentine, J. Luther Moon and Berkeley Williams, of Richmond, Va., and Lindsey Hopkins of Atlanta, Ga., and is represented by Henry W. Anderson, Thomas B. Gay and Irvin G. Craig as counsel. The intervening petitions state that the committee represents in excess of 50,000 shares of the preferred and common stocks of the Chesapeake & Ohio. Protest against the acquisition of control is based on the ground that it is not in the public interest and that the terms and conditions upon which authority is sought to acquire such control are not just and reasonable, while the proposed stock issue, it is stated, will impair the company's ability to perform service and is incompatible with the public interest.

Minority Stockholders State Case.—The Stockholders Protective Committee on March 7 addressed to stockholders a seven-page pamphlet outlining in detail reasons why the committee proposed to offer its opposition to the new plan for the merger of the Chesapeake & Ohio, the Erie and the Pere Marquette. Excerpts from the committee's statement to the stockholders follow:

First: The proposal to acquire stock control of Erie and Pere Marquette is a revival in substance, though not in form, of the former plan of O. P. and M. J. Van Sweringen to create a new and fourth system in eastern trunk line territory which the Interstate Commerce Commission disapproved in its opinion on March 2, 1926. It was unanimously held in that proceeding that the terms and conditions upon which the properties of your company were proposed to be leased to the New Nickel Plate Company were not just and reasonable. While the decision was then generally referred to in the press as approv-

ing the transportation plan proposed there was in fact equal division of opinion among the eight commissioners who passed upon this question; Commissioners Meyer, Esch, Cox and Lewis being of opinion that it was, while Commissioners Eastman, McManamy, Aitchison and Campbell held that it was not in the public interest.

The Erie and Pere Marquette were two of the companies with which it was proposed to unify your company through the instrumentality of a lease. Their proposed stock ownership by your company involves the accomplishment of a similar object through a different though equally objectionable means. There was not at the time of the commission's decision on March 2, 1926, and there is not now, either operating reason or financial necessity for so allying your company.

Second: The Chesapeake & Ohio and its subsidiary, the Hocking Valley, serve the great bituminous coal fields of Virginia, West Virginia and eastern Kentucky, which constitutes the largest reservoir of bituminous coal in America and are actually and potentially the greatest of all the bituminous coal carrying roads. Their deep water terminals at Hampton Roads and on the Great Lakes at Toledo and their eastern and western connections at industrial gateways with other large trunk lines, now afford free movement of this basic commodity to points of foreign and domestic demand, without restraint from stock controlling alliances with connecting carriers. This position of independence should be retained in the public interest.

Third: Messrs. O. P. and M. J. Van Sweringen now own or control a majority of the stock of the Chesapeake & Ohio and the effect of the proposed plan is to transfer from the Vaness Company and the Nickel Plate (both of which companies are also controlled by them), the Erie and Pere Marquette stocks owned by those companies at enormous profits.

The aggregate profit to the Vaness Company and the Nickel Plate (both of which are, as stated, controlled by O. P. and M. J. Sweringen) on the Erie and Pere Marquette stocks owned by those companies at the time of the former Nickel Plate hearing and now proposed to be sold to your company is, therefore, $13,345,678, plus dividends received thereon, less interest charges. The Vaness Company is also deriving substantial additional profits on the 6,500 shares and the Nickel Plate on the 54,900 shares of Pere Marquette common stock, the cost of which is not known by this committee.

Any proposal having this result is, in the opinion of this committee, legally and morally unsound, and should never be approved by any governmental agency.

Fourth: The acquisition of stock control of Erie and Pere Marquette by your company at the prices paid for shares already acquired and at the prices proposed to be paid in exercising the so-called options from O. P. Van Sweringen and the Nickel Plate, or in the present market, involves the payment of prices greatly in excess of the fair value of the stocks proposed to be acquired. When the Interstate Commerce Commission disapproved the prior plan of unifying your company with the Erie, Pere Marquette and Nickel Plate the market value of the common stock of your company advanced on the New York Stock Exchange, from $112 on March 2 to $122 per share on March 3, 1926, while the market price of Erie's shares fell to $33.75 for the first preferred, $30 for the second preferred and $22.25 for common stock, clearly demonstrating that the proposed unified operation of the Erie with your company was largely responsible for the prior advances in the market price of Erie stocks. As a result of the very substantial purchases of these shares which the directors of your company have made without formal action or approval by its stockholders, and because of the proposed acquisition of control of its stock by your company, the price of Erie first preferred has advanced to $59.50, the second preferred to $54.25 and the common to $47.50 per share. These prices are, in the opinion of this committee, purely artificial and reflect the effect of the present and contemplated purchases by your company.

Acquisition of stock control of Erie by your company at an estimated cost of $36,511,989 involves to a very large extent, therefore, a venture of this enormous sum of money in the operation of anthracite mines in Pennsylvania, far from the territory served by your company, the successful conduct of which is constantly affected by disturbed labor conditions, strikes, etc., incident to "union" mine operations, for which no remedy has ever been found.

Mr. Harahan's letter of February 24 throws no light on how it is expected your company as a majority stockholder of the Erie, will be able to accomplish that which one of the strongest financial interests in America, who have controlled its affairs for the last 25 years, have been unsuccessful in doing. Yet your company is asked to invest $36,511,989 in the stocks of Erie which would be entirely wiped out unless the above mentioned and other financial requirements are met.

Fifth: When the Interstate Commerce Commission disapproved the prior unification plan the common stock of your company, as heretofore stated, advanced from $112 on March 2 to $122 per share on March 3, 1926, while Pere Marquette stocks sustained heavy declines in market values. The prior preference shares fell to $79, the preferred to $70.75 and the common to $67 per share, thus demonstrating that its proposed unified operation with your company was largely responsible for the prior advances in market price of its stocks. As the result of the purchases of these shares which the directors of your company have made without formal action or approval by its stockholders, and largely because of the proposed acquisition of control of its stock by your company, the prices of Pere Marquette stocks have recently reached the highest point at which they have ever sold, the prior preference shares selling at $95.50, the preferred shares at $92 and the common shares at $126 per shares. The purchase of such additional shares of Pere Marquette stock in the prevailing market, as is necessary to acquire the proposed control by your company, will necessarily involve the payment of artificial and highly excessive prices that do not, in the opinion of this committee, represent either present or potential property values.

CHICAGO & EASTERN ILLINOIS.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire control of the Chicago Heights Terminal Transfer by purchase of its stock from the Chicago Heights Land Company for a cash consideration of $1,187,500.

CHICAGO, MILWAUKEE & ST. PAUL.—*Ask Appeal from Receivership Sale Decision.*—The bondholders' defense committee which has opposed the reorganization of this company has asked for an appeal from Federal Judge Wilkerson's decision approving the sale and plan of reorganization. A hearing will be held before Judge Wilkerson on March 14 at Chicago.

CHICAGO, ROCK ISLAND & PACIFIC.—1926 *Earnings.*—This company has mailed to stockholders a tabloid report containing the income account, profit and loss account and the condensed general balance sheet to which are appended remarks by Charles Hayden, chairman of the board, and J. E. Gorman, president. As previously reported the income statement shows net income available for dividends of $11,515,881 equivalent, after allowance for preferred dividends, to $10.62 per share on the common stock. Net income in 1925 was $6,966,132 or $4.54 per share on the common. The report among other things states:

"The property continues in excellent physical condition. Since the very successful reorganization in 1917, when it was returned to the stockholders without any foreclosure, more than $44,000,000 has gone into improvements and $32,000,000 into new equipment; the cumulative effect of which has contributed very largely to the present gratifying showing. The maintenance is fully up to the standard of roads similarly situated, and the road is in shape to handle a large increase in its traffic without greatly increased expenses.

"In view of the foregoing, it was a source of gratification to your board of directors to place the common stock upon a 5 per cent dividend basis; which we think marks the return of the company to the prestige which it enjoyed for so many years prior to its receivership in 1916. It is a result for which we have hoped for many years, and which we believe is fully justified by the company's record in the last few years and by its present prospects."

The condensed income account follows:

Chicago, Rock Island & Pacific

	1926	1925
Operating revenues...	$137,911,415	$130,683,246
Operating expenses:		
Maintenance of way and structures.....	17,145,109	15,622,835
Maintenance of equipment	28,607,808	28,271,705
Traffic	3,021,627	2,941,232
Transportation	49,848,490	49,868,630
Total railway operating expenses	$102,812,256	$100,769,486
Net revenue from railway operations	35,099,160	29,913,760
Railway tax accruals..	7,490,680	7,037,771
Total railway operating income	$27,539,860	$22,799,945
Other income	1,958,448	2,077,943
Total income	$29,498,308	$24,877,888
Deductions from income (excepting interest):		
Hire of freight cars, Dr.	3,761,215	3,328,423
Joint facility rents, Dr.	1,948,307	1,985,554
Total	$6,506,808	$6,050,549
Balance before deduction of interest.....	22,991,500	18,827,339
Total interest	$11,475,619	$11,861,206
Balance of income (available for dividends	$11,515,881	$6,966,132
Dividends:		
7 per cent preferred.	$2,059,547	$2,059,547
6 per cent preferred.	$1,507,638	$1,507,638
Total dividends	$3,567,185	$3,567,185
Balance surplus (carried to profit and loss)	7,948,696	3,398,947
Per cent on common stock	10.62	4.54

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—1926 *Earnings.*—A preliminary statement of 1926 earnings shows net income after interest and other charges of $15,860 as compared with $2,072,591 in 1925. These figures were incorrectly given in the *Railway Age* of February 19. Selected items from the 1926 income statement follow:

Minneapolis, St. Paul & Saulte Ste. Marie

	1926	1925
Railway operating revenues	$46,856,739	$49,670,264
Maintenance of way...	$6,526,430	$6,430,610
Maintenance of equipment	8,846,291	8,867,193
Transportation	17,829,202	18,376,204
Total operating expenses..	$35,696,798	$36,075,537
Operating ratio	76.18	72.63
Net revenue from operations	11,159,940	13,594,728
Railway tax accruals ..	2,799,810	3,264,545
Railway operating income	$8,347,407	$10,322,495
Equipment rents, Dr...	605,927	694,153
Joint facility rents, Dr..	734,220	669,112
Net railway operating income	$7,007,261	$8,959,230
Non-operating income..	135,449	32,290
Interest on funded debt.	$6,855,952	$6,854,350
Total deductions from gross income	$6,991,401	$6,886,639
Net income	$15,860	$2,072,591

MISSOURI PACIFIC.—*Bonds.*—The Interstate Commerce Commission has authorized the authentication and delivery of $96,126,500 of first and refunding mortgage 5 per cent bonds and the sale of $95,000,000 of the bonds at 97¼. The balance of $1,216,500 is to be pledged as collateral for short term notes. The commission has also modified an order of October 23, 1926, at the request of the company, to authorize the authentication and delivery of $11,219,000 of first and refunding mortgage bonds, to be pledged as collateral for notes, instead of $20,345,000.

OLD COLONY.—*Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue 8,917 shares of capital stock to pay for permanent improvements made to its property by the New York, New Haven & Hartford under lease.

PENNSYLVANIA, OHIO & DETROIT.—*Bonds Sold.*—Kuhn, Loeb & Co have sold $22,000,000 first and refunding mort-

gage 4½ per cent bonds, series A, due April 1, 1977, at 95 and accrued interest, to yield over 4.76 to maturity. The bonds are guaranteed principal and interest by the Pennsylvania.

The series A 4½ per cent bonds will be redeemable as a whole only, at the option of the company, upon sixty days' previous notice on April 1, 1932, or on any interest date thereafter to and including April 1, 1972, at 102½ and accrued interest, and thereafter on any interest date at a premium equal to one-fourth per cent for each six months between the redemption date and the date of maturity.

The bonds are to be issued under the first and refunding mortgage of the company, dated April 1, 1927, and will be secured by a direct mortgage on all the lines of the company and upon all properties acquired by the issuance of any of the bonds. The present properties, which are an integral part of the Pennsylvania System, include about 783 miles of line in Ohio and Michigan. The first and refunding mortgage bonds, upon completion of this financing, will be subject to $8,852,000 prior lien bonds, which may not be extended or renewed, and for the retirement of which at or before maturity first and refunding bonds are reserved.

The purpose of the present issue of bonds is to reimburse the treasury of the Pennsylvania Railroad for capital expenditures made on its property covered by the first and refunding mortgage, for the retirement of maturing obligations and for other corporate purposes.

All properties of the Pennsylvania, Ohio & Detroit are leased to the Pennsylvania under a lease running for 999 years from December 10, 1925. The Pennsylvania Railroad Company agrees under said lease to pay a sum sufficient to cover interest on indebtedness, sinking funds, taxes, administration expenses and 5 per cent dividends on the capital stock of the company, of which there is at present outstanding $28,410,000, all of which (except directors qualifying shares) is owned by the Pennsylvania and its subsidiaries.

PERE MARQUETTE.—*Extra Dividend.*—Directors, meeting in New York on March 2, declared an extra dividend of $2 a share on the common stock, payable April 1 to stockholders of record March 14. This issue was put on a 4 per cent annual dividend basis in July, 1923, and the rate was increased to 6 per cent in May, 1926, when a special dividend of 2 per cent was also paid.

READING COMPANY.—*Bonds.*—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of $3,000,000 of first mortgage 5 per cent bonds of the Philadelphia Grain Elevator Company.

TOLEDO, PEORIA & WESTERN.—1926 *Earnings.*—A preliminary statement of 1926 earnings shows a deficit after interest and other fixed charges of $310,782. There was a deficit of $415,652 in 1925.

WESTERN MARYLAND.—*Stock.*—The Interstate Commerce Commisison has authorized this company to issue 99,990 shares of common stock in exchange for a like amount of second preferred stock.

WESTERN MARYLAND.—*Conversion of Stock.*—The Interstate Commerce Commission has authorized the issuance of 99,990 shares of common stock to be held available for exchange share for share for a like amount of shares of second preferred stock.

Acquisition.—This company has applied to the Interstate Commerce Commission for authority to acquire control of the Chesapeake & Curtis Bay by the purchase of its stock for $325,000 cash.

WHEELING & LAKE ERIE.—*Common Stock for Conversion.*—The Interstate Commerce Commission has approved this carrier's application (see *Railway Age* of February 12, 1927, page 496) for authority to issue from time to time 222,276 shares of common stock in exchange for 118,826 shares of prior lien stock and 103,450 shares of preferred stock.

YORK HARBOR & BEACH.—*Abandonment.*—This company, an electrically operated subsidiary of the Boston & Maine, has been given a certificate by the Interstate Commerce Commission authorizing abandonment of its line from Kittery Junction, Me., to York Beach, 11 miles. Passenger service will continue to be supplied by the buses of the Boston & Maine Transportation Company while the Boston & Maine will take over one mile of track between Kittery Junction and the Portsmouth (N. H.) Navy Yard. The commission's decision has a proviso that if the Boston & Maine should ever discontinue the bus service it may be required to "provide the necessary transportation facilities by an extension of its line."

Average Price of Stocks and Bonds

	Mar. 8	Last week	Last year
Average price of 20 representative railway stocks.	105.36	107.61	91.21
Average price of 20 representative railway bonds.	98.63	98.57	95.15

Valuation Reports

The Interstate Commerce Commission has issued final or tentative valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes, as of the respective valuation dates, as follows:

Final Reports

Union & Glenn Springs.....	$429,500	1918
Augusta & Summerville.....	110,121	1916
Louisiana & Mississippi.....	353,000	1918
Escanaba & Lake Superior...	1,767,725	1918
Charleston Union Station Co.	274,226	1917

Tentative Reports

New Orleans Terminal Company	$6,675,000	1918
New Orleans & Northeastern.	14,335,000	1918
Alabama Great Southern.....	21,150,000	1918

Dividends Declared

Alabama & Vicksburg.—Common, 3 per cent, semi-annually, payable April 1 to holders of record March 8.

Lehigh Valley.—Common, $0.87½, quarterly; preferred $1.25, quarterly; both payable April 1 to holders of record March 12.

New York, Lackawanna & Western.—Common, 1½ per cent, quarterly, payable April 1 to holders of record March 14.

Northern Pacific.—Common, 1¾ per cent, quarterly, payable May 2 to holders of record March 17.

Old Colony.—Common, 1¾ per cent, quarterly, payable April 1 to holders of record March 12.

Pere Marquette.—Common, 1½ per cent, quarterly; common extra, 2 per cent; both payable April 1 to holders of record March 14. Prior preferred, 1¾ per cent, quarterly; preferred, 1¾ per cent, quarterly, both payable May 2 to holders of record April 14.

Reading.—Second preferred, 1 per cent quarterly, payable April 14 to holders of record March 21.

St. Louis, Rocky Mountain & Pacific.—Common, ½ per cent, quarterly; preferred, 1½ per cent, quarterly, both payable March 31 to holders of record March 15.

St. Louis-San Francisco.—Common, 1¾ per cent, quarterly; common extra, $0.25; both payable April 1 to holders of record March 15.

Southern.—Mobile & Ohio stock transfer certificates (No. 1), 5 per cent, payable April 1 to holders of record March 19.

Vicksburg, Shreveport & Pacific.—Common, 2½ per cent, semi-annually; preferred 2½ per cent, semi-annually, both payable April 1 to holders of record March 8.

Officers

Executive

Benjamin R. Pollock, vice-president and general manager of the Boston & Maine, with headquarters at Boston, Mass., has resigned after 49 years of active railroad service. He was born on January 2, 1865, and was educated in the public schools. He began his railroad career with the Lehigh Coal & Navigation Company in 1879, as a telegrapher, and in 1881 he served with the old New York & New England Railroad (later the New England Railroad) as telegraph operator, working up through the various grades until, in 1898, at which time the New England was taken over by the New York, New

B. R. Pollock

Haven & Hartford, he held the rank of assistant superintendent. Mr. Pollock became sucessively assistant superintendent of the Highland division of the New Haven until January, 1904; superintendent of the Air Line-Northampton division until December, 1904; superintendent of the Highland (now the Midland division) to October, 1909, and general superintendent of the New Haven to 1912, when he was appointed general manager of that road. In 1913 he was appointed general manager of the Boston & Maine and during the period of federal control he served as federal manager of this road. In March, 1920, he was appointed vice-president in addition to his duties as general manager, which position he held until the time of his resignation from the Boston & Maine.

Financial, Legal and Accounting

Edwin G. Merriam, assistant to the vice-president and general solicitor of the Missouri Pacific, with headquarters at St. Louis, Mo., has been retired on pension after 44 continuous years in

the service of that company. Mr. Merriam was born on June 21, 1851, at Lawrence, Mass., and after attending the public schools in that city he entered Harvard College in 1870, completing the work in law in 1875 as one of two men whose high undergraduate standing made them eligible to enter a one year law course at Harvard. He went to North St. Louis, Mo., in October, 1875, teaching school for a short period until he entered the employ of the Union Pressed Brick Company as a bookkeeper. Mr. Merriam was then appointed as an assistant to the master in chancery for the federal court at St. Louis, assisting in the preparation of several textbooks on law written by Judge S. D. Thompson, at that time the master of chancery. In 1882 he entered the service of the Missouri Pacific in the law department, being advanced to assistant general solicitor in 1887. His title was changed to assistant to the vice-president and general solicitor in 1909, a position he held, with headquarters at St. Louis, until his retirement.

Operating

C. L. Sauls has been appointed superintendent of the South Florida division of the Seaboard Air Line, with headquarters at Arcadia, Fla., succeeding **M. Crown,** transferred to the staff of the vice-president—operations.

H. V. Ashley, trainmaster on the Erie, at Kent, Ohio, has been appointed assistant superintendent, with headquarters at Youngstown, Ohio. **D. M. Raney,** trainmaster at Huntington, Ind., has been transferred to Kent, succeeding Mr. Ashley.

W. H. Fogg, superintendent of the Northern division of the Chicago, Indianapolis & Louisville, with headquarters at Lafayette, Ind., has been assigned to other duties as special representative of the general superintendent and has been succeeded by **E. F. Thomson,** trainmaster, with headquarters at Lafayette. **E. E. McConnell,** dispatcher at Lafayette, has been promoted to succeed Mr. Thomson.

Hudson J. Bordwell, who has been appointed superintendent of the Delaware division of the Erie, Eastern district, with headquarters at Susquehanna, Pa., was born on December 7, 1885, in Buffalo, N. Y., and was educated in the public schools and a business school. He entered railroad service with the Erie on July 1, 1902, as a telegraph operator, and from July, 1911, until May, 1913, he served as a train dispatcher. At this time he was appointed chief dispatcher and held that position until June, 1914, when he became chief clerk to the superintendent. He served subsequently as chief dispatcher until May, 1917, and then became trainmaster, which position he held until the time of his recent appointment as superintendent of the Delaware division.

Raymond D. Ross, who has been appointed superintendent of the Louisville & Nashville, with headquarters at Cincinnati, Ohio, was born at El Dorado, Ill., on July 10, 1883, and after graduating from high school at that point entered railway service on September 1, 1899, with the L. & N. Mr. Ross occupied various positions in the freight department of this railroad from 1899 to 1912 when he was promoted to cashier at the East End freight station at Cincinnati. In 1920, he was advanced to agent at the West End station, Cincinnati, becoming agent at Birmingham, Ala., in the following year. During 1921 he also acted as assistant trainmaster at Birmingham. Mr. Ross was promoted to assistant superintendent of the L. & N. at Cincinnati in 1925, a position he held until his further promotion to superintendent at that point.

Herman J. Klein, who has been appointed general manager of the Erie, with headquarters at Youngstown, Ohio, was born in 1875 at Bellevue, Ohio, and entered railway service in April, 1887, on the Lake Erie & Western (now a part of the New York, Chicago & St. Louis) at Luna, Ohio. In 1889 he left the L. E. & W. to become a telegrapher on the Pittsburgh & Western (now a part of the Baltimore & Ohio) at New Castle, Pa., taking a similar position on the Erie at Huntington, Ind., the following year. Mr. Klein spent the next 21 years on the Erie at Huntington, becoming train dispatcher in 1893, chief dispatcher in 1910 and trainmaster in 1911. In 1915 he was transferred to Meadville, Pa., and the next year he was promoted to assistant superintendent, with headquarters at Youngstown. Later in the same year Mr. Klein was again promoted to superintendent, with headquarters at Meadville, Pa., becoming assistant general superintendent of Lines east, with headquarters at New York in 1918 and general superintendent of the same territory in 1919. He was advanced to superintendent of transportation of the Ohio region, with headquarters at Youngstown, in 1920, a position he held until his appointment as general manager at the same point.

Traffic

Louis J. Brinkman, general agent of the Michigan Central, in the operating department at Detroit, has been appointed general freight agent, with headquarters in the same city, succeeding Mr. Brunck, promoted.

Roy C. Davidson, assistant general freight agent on the Chicago, Rock Island & Pacific, with headquarters at Chicago, has been appointed general freight agent, with headquarters at the same point, succeeding **Frederick K. Crosby,** deceased.

Charles L. Herzog, former National League baseball player, has been appointed general athletic passenger agent of the Baltimore & Ohio, with headquarters at Baltimore, Md. He will interest himself in the transportation of athletes and athletic organizations.

E. A. Groves, general agent of the Chicago, Rock Island & Pacific, with headquarters at New Orleans, La., has been appointed assistant general freight agent with headquarters in Chicago, to succeed **Roy C. Davidson,** who has been appointed to general freight agent.

Edward W. Brunck, general freight agent of the Michigan Central, with headquarters at Detroit, Mich., has been appointed assistant freight traffic manager, with headquarters in the same city. **Louis J. Brinkman** has been appointed general freight agent, with headquarters at Detroit, Mich.

Edgar L. McCaulley, who has been appointed general freight agent of the Western Maryland, with headquarters at Baltimore, Md., was born on March 7, 1889. He received a public school education, and in 1908 entered the service of the Baltimore Steam Packet Company (Old Bay Line) as a clerk. In 1911 he became chief rate clerk for this line, and, in 1916, went with the Western Maryland as chief clerk in the traffic department. During the war he was a second lieutenant in the aircraft production service, United States Army. In January, 1919, he returned to railroad service in the traffic department of the combined Baltimore & Ohio and Western Maryland organizations, which had been merged during federal control. Upon the return of the roads to their owners on March 1, 1920, he again became chief clerk in the traffic department of the Western Maryland. In 1921 he was appointed tariff agent, and, in 1924, assistant general freight agent, in which latter position he was serving at the time of his recent promotion as above noted.

Lawrence B. Burford, who has been appointed general freight agent of the Erie, with headquarters at New York City, was born in October 29, 1879, at Washington, D. C., and was educated at the public schools. He entered railway service with the Erie in September, 1902, and served as a clerk in the local freight station at Chicago until June, 1905. He served successively as rate clerk, division freight office, until March, 1907; clerk to the general manager, Erie Dispatch, until September, 1907, and percentage clerk in the general freight office until December, 1908. In January, 1909, he was appointed chief of the tariff bureau at Chicago, and was transferred to New York in January, 1910, serving in the same capacity. In November, 1911, Mr. Burford was appointed general agent, and in January, 1916, he became assistant to the general traffic manager. He was furloughed during the World War to the British Ministry of Shipping at New York City, serving as assistant director. This organization was engaged in moving grain and grain products for the allied governments. In January, 1920, Mr. Bur-

ford resumed service with the Erie in the position of assistant general freight agent at New York City. In March, 1920, he became general freight and passenger agent at Hornell, N. Y.; in November, 1922, general freight agent in New York City and in February, 1923, general freight and passenger agent for the New York region, which latter position he was holding at the time of his recent appointment as general freight agent.

W. S. Burton, who has been appointed general foreign freight agent of the Western Maryland, with headquarters at Baltimore, Md., was born on October 29, 1880, at Greenwood, Baltimore county, Md. He attended the Baltimore public schools and Baltimore City College, and entered railroad service in 1898 with the Baltimore & Ohio as messenger in the agent's office, Camden station, Baltimore. Shortly thereafter he became a bill clerk and, the following year, revenue clerk. In 1900 he became voucher clerk in the general freight claim department and, in 1901, assistant statistician. In 1902 he was appointed a claim investigator and, the following year, assistant to cashier in the agent's office at Cleveland, Ohio. The following year he served as claim clerk in the same office, and later as statistician in the general freight office at Pittsburgh, Pa. Then he became assistant claim clerk with the same headquarters and, in 1906, was appointed trace and reconsigning clerk. The following year he became rate clerk and, in 1912, chief clerk in the general freight office at Pittsburgh. Two years later he entered the service of the Western Maryland as chief clerk in the general freight office at Baltimore and two years thereafter was appointed freight tariff agent. In 1918 and 1919, he did special rate work for the Western Maryland and Baltimore & Ohio and in 1920, became freight tariff agent of the Western Maryland. The following year he was appointed division freight agent and, in 1924, assumed also the duties of foreign freight agent, in which capacities he remained until the time of his recent promotion.

W. S. Burton

Mechanical

C. C. Sturgess, assistant general car foreman on the Kansas City Southern, with headquarters at Pittsburg, Kan., has been appointed general car foreman, with headquarters at Shreveport, La., succeeding R. L. Burch, deceased.

J. A. Brossart, superintendent of car shops of the Cleveland, Cincinnati, Chicago & St. Louis, at Beech Grove, Ind., has been appointed general master car builder, with headquarters at Indianapolis, Ind., succeeding **I. S. Downing,** deceased.

J. A. Brossart

Engineering, Maintenance of Way and Signaling

Elmer Davis has been appointed division engineer of the Colorado division of the Union Pacific, with headquarters at Denver, Colo., succeeding **S. H. Osborne,** promoted.

F. J. Walter, assistant engineer of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., has resigned to become general manager of the Southern Wood Preserving Company, Chattanooga, Tenn.

J. P. Mack has been appointed division engineer of the Los Angeles & Salt Lake, Los Angeles division, with headquarters at Los Angeles, Cal., succeeding **R. L. Adamson,** appointed assistant chief engineer. **Frank Strong,** terminal engineer, with headquarters at Los Angeles, has been appointed industrial engineer, with headquarters in the same city. The position of terminal engineer has been abolished.

L. P. Rossiter, division engineer of the Lehigh Valley, with headquarters at Buffalo, N. Y., has been appointed assistant engineer of grade crossing elimination in charge of the work in New York, and will be succeeded by **E. J. Cullen,** division engineer, at Sayre, Pa. **R. E. Patterson,** division engineer, with headquarters at Hazleton, Pa., has been appointed division engineer at Sayre, Pa., succeeding Mr. Cullen. **H. M. Fearon,** division engineer at Auburn, N. Y., will relieve Mr. Patterson at Hazleton, while **A. B. Shimer,** track supervisor at Easton, Pa., has been appointed division engineer at Auburn, N. Y., succeeding Mr. Fearon.

Allen R. Wilson, who has been appointed engineer of bridges and buildings of the Pennsylvania with headquarters at Philadelphia, Pa., was born in January, 1877, at Bordentown, N. J. He was educated at the public school in that city, the State High School at Trenton, N. J., and graduated from Drexel Institute, Philadelphia, Pa., in 1896 as a mechanical engineer. Mr. Wilson entered railroad service in July, 1902, with the Pennsylvania, as a draftsman in the bridge department specializing on the design of movable bridges (including the operating machinery), turntables and transfer bridges. He was appointed subsequently assistant engineer in March, 1920; assistant engineer of bridges in May, 1920, and assistant engineer of bridges and buildings in January, 1923, which position he held at the time of his appointment to engineer of bridges and buildings of the Pennsylvania.

A. R. Wilson

Obituary

George A. Mountain, chief engineer of the Dominion Railway Board at Ottawa, Canada, died during the week ending March 5 in that city after a long illness.

George H. Sines, assistant to the vice-president of the Union Pacific, with headquarters at Omaha, Nebr., died in that city on March 9 of acute indigestion.

George Eisenhauer, electrical engineer of the Erie, died on February 14, 1927. Mr. Eisenhauer was born in New York, December 21, 1870. He began service with the Erie in 1888 as a telegrapher on the New York division. Later, he was advanced to the position of signal inspector and subsequently he became chief electrician in Jersey City. On August 1, 1911, Mr. Eisenhauer was appointed electrical engineer of the road, which position he held at the time of his death.